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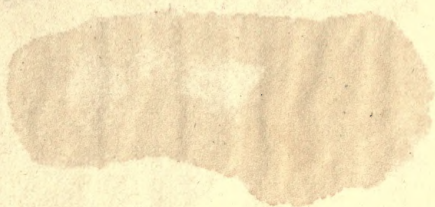
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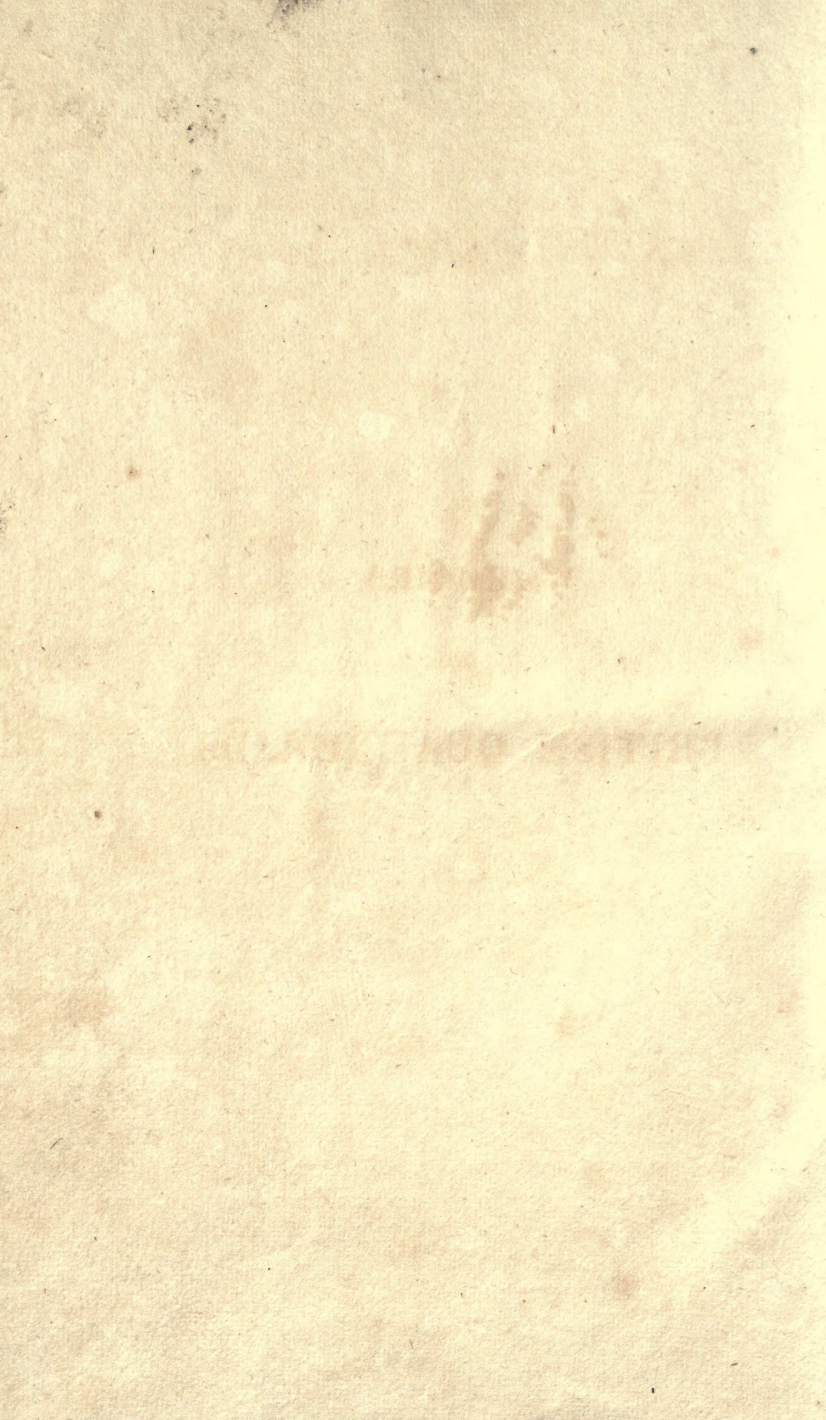
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MEMOIRS
OF
BRITISH QUADRUPEDS.

MEMOIRS

OF
BRITISH GUERRILLAS

MEMOIRS
OF
BRITISH QUADRUPEDS,
ILLUSTRATIVE PRINCIPALLY OF THEIR
HABITS OF LIFE, INSTINCTS, SAGACITY,
AND
USES TO MANKIND.

ARRANGED ACCORDING TO THE SYSTEM OF LINNÆUS.

BY THE REV. W. BINGLEY, A. M.

*FELLOW OF THE LINNEAN SOCIETY,
AND LATE OF PETERHOUSE, CAMBRIDGE.*

**WITH ENGRAVINGS FROM ORIGINAL DRAWINGS,
EXECUTED CHIEFLY BY MR. SAMUEL HOWITT.**

LONDON:

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1809.

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TO THE
HONOURABLE AND RIGHT REVEREND
BROWNLOW,
LORD BISHOP OF WINCHESTER,
DISTINGUISHED
BY HIS SOLICITUDE TO ENCOURAGE
USEFUL LITERATURE,
AND BY HIS UNREMITTED ATTENTION TO PROMOTE
THE BEST INTERESTS OF CHRISTIANITY,
THE FOLLOWING WORK,
IN WHICH IT HAS BEEN THE DESIGN OF THE AUTHOR
TO INCULCATE ONLY THE
PUREST PRINCIPLES OF NATURAL RELIGION,
AND TO EXHIBIT,
AS FAR AS WAS CONSISTENT WITH THE PLAN OF HIS
UNDERTAKING,
THE WISDOM OF GOD,
IN THE WORKS OF CREATION,
IS RESPECTFULLY,
AND WITH GREAT DEFERENCE,
INSCRIBED.

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THE UNIVERSITY OF CHICAGO
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P R E F A C E.

THE present is intended as the first volume of a series of Memoirs of British Animals, in which, for the accommodation of such persons as are inclined to pursue the study of any one branch of our Zoology, in preference to the others, each class will be rendered perfectly distinct from the rest. The prominent features of this work are meant to consist in an accurate delineation of the habits of life, instincts, and sagacity, of the animals of Great Britain and Ireland, from the highest to the lowest classes. The technical and descriptive parts will be separated from the body of the work, and inserted at the end of each class, in the form of a synopsis. By such separation, the author cannot but hope that he shall have rendered an acceptable service, not only to the general reader, but also to the scientific naturalist. He has ever entertained the highest sentiments

sentiments of respect and esteem for the memory, as well as for the talents, of the late Mr. Pennant; yet he has long felt that the indiscriminate mixture of description and anecdote, throughout that gentleman's work on British Zoology, is attended with numerous inconveniences. In a popular view it is objectionable, as it certainly derogates from the interest that would be otherwise excited; and to persons desirous of examining the animals from his description, it is, occasionally, very troublesome. In the scheme, of which the present volume affords a specimen, the description will be found in terms as precise as can, with propriety, be adopted; and to have, in all cases, the respective parts following each other, as nearly as possible, in the same succession.

During the several years that this work has been in preparation, the author requests permission to state, that no labour or diligence have on his part been spared to render it deserving

serving of approbation. From his own application to the subject, and from the communications of numerous friends, (whose kindness, he trusts, will still be continued,) a very considerable portion of original matter, in all the classes, has already been obtained. The remainder of his materials will be furnished from the works of the most authentic naturalists of foreign countries, and from other sources, which, *for the most part*, are not easily accessible to the English reader.

With respect to the plates, he considers himself peculiarly fortunate in having obtained the able assistance of Mr. Howitt, whose excellence in the art which he professes is too well known, and too justly appreciated by the public, to need, in this place, any encomiums. And it is but an act of justice to the character of a young man, deserving of every encouragement, to state, that the drawings for several of the engravings, (particularly of the Polecat, Weesel, Stoat, two species of Shrew, and

and Water Rat,) were made by Mr. Harry Hoyle, of Height, near Ripponden, Yorkshire.

Notwithstanding all the care that has been taken, the author is sorry to remark, that there are yet left three or four plates, particularly those of the Great and Barbastelle Bats, which are not quite so correct as he could have wished them to be. He trusts, however, to the candour of his readers to overlook the defects of these, in consideration of what he hopes will be thought real excellence in the greatest part of the others.

It only remains to state, that the author will consider himself much indebted to the kindness of any gentleman who will take the trouble to communicate to him such *original* observations on the habits of life and economy of the *British Fishes*, as may be thought likely to prove interesting to the public.

CHRISTCHURCH, HANTS,

March 1, 1809.

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ERRATA ET CORRIGENDA.

P. 33, l. 8, *for ephemera read ephemeræ.*

—, — 4, *from the bottom, for their read the.*

34, — 5, *for become read becomes.*

48, — 23, *for generally read usually.*

95, — 17, *for which read that.*

123, — 3, 4, and 7, *for it read he.*

129, — 22, *for entirely read wholly.*

131, — 15, *for her cubs read the cubs.*

153, — 22, *after and insert have.*

204, — 18, *for hestige read vestige.*

218, — 21, *dele of them.*

252, — 15, *for their read there.*

348, — 9, *for feet read foot.*

388, — 16, *for is read in.*

Synopsis. — 4, — 5, *from the bottom, for oroque read oreque.*

7, — 3, *for lseek read sleek.*

11, — 27, *for phoco read phoca.*

14, — 4, *from the bottom, for familiarus read familiaris.*

BRITISH QUADRUPEDS.

PART I.

THE HISTORY OF THE

1797

INTRODUCTION;

CONTAINING

A GENERAL VIEW OF THE

STRUCTURE AND FUNCTIONS OF QUADRUPEDS.

Que de charmes, que d'idées douces, agréables, nous présente l'Histoire Naturelle! Que d'objects variés et intéressans! Quelle source inépuisable d'observations, de recherches et d'instruction pour celui qui se sent un goût décidé pour cette vaste science!

Daudin.

THERE is a wide difference, with respect to intellectual powers, betwixt men and brute animals. The faculties of the latter are confined within extremely narrow bounds. Guided only by appetite and instinct, they are capable of little knowledge further than what is necessary towards their own immediate support and preservation; and there is not one of the whole race that can extend its industry beyond its instinct, be its necessities what they may. The Ape, which delights in the warmth of the embers that the traveller has left in the woods, has not yet learned to imitate him, by adding fuel to the heap, in order to keep alive the blaze. The Ox has never thought of sowing the grain that he treads out with his feet on the floor of the barn; nor the

B

Boar,

Boar, the acorns which he discovers amongst the fallen leaves in the woods. Man subjects to *his* dominion the whole both of the vegetable and animal creation. "The fear of you, and the dread of you, (says the Almighty,) shall be upon every beast of the earth, and upon every fowl of the air, upon all that moveth upon the earth, and upon all the fishes of the sea: into your hands are they delivered. Every moving thing that liveth shall be meat for you: even as the green herb have I given you all things*.

The barrier which separates men from brutes is fixed, and immutable; and how slender soever it may sometimes *appear* to us, Divine Wisdom has ordained that it shall not be surmounted.

In the general structure of the bodies of men and quadrupeds, there is, in many respects, a very close alliance. They are formed of precisely the same elements, and have, for the most part, similar organs. They are supported by a bony skeleton; have motion by means of muscles, sensation by nerves, and are nourished by a fluid that circulates within them, and which is itself renewed by digestion. They have each a bony head, containing the brain and the principal organs of sense, placed at the anterior extremity of a vertebral column, (part of the skeleton,) which contains the spinal marrow, or the common *fasciculus* of the nerves, and of which the posterior extremity is elongated into a *coccyx* or tail. Joining to each side of the upper part of the vertebral column, are several long and curved bones, or ribs, which bend forward so as to form within them a somewhat circular cavity, for the protection of the most important of the viscera. They have likewise, in common with man, arteries and veins, and a muscular heart, for the purpose of propelling the blood into every part of the body. Their brain,

* Genesis, chap. ix. v. 2 and 3.

and their general organs of sense, have the same essential parts. They have all an alimentary canal, a liver, a pancreas, a spleen, and kidneys. In short, their general structure is so nearly allied, that it is difficult to determine whether, on the whole, the resemblances or the differences are to be considered most predominant. These surely are so many satisfactory demonstrations that “no disposition of matter can give mind; and that the body, how nicely soever it may be formed, is formed in vain, when there is not infused a soul to direct its operations.”

The Organs of Motion.

The bones, (or skeleton,) constitute the frame-work of the bodies both of men and quadrupeds. They surround the cavities, defending the parts which are of greatest importance in the animal economy, such as the brain, and the heart; and they serve as levers on which the muscles act. They are covered, externally, with a membrane composed of nerves and vessels, denominated *periosteum*; and the cavities of all the long bones contain a peculiar kind of fatty substance called *marrow*. They are joined together either, as in the skull, by *sutures*, where the edges of two flat bones are denticulated into, touch, or lie upon each other; by being wedged one into another, as the teeth into the sockets of the jaws; or by *ligaments*, a tough and strong arrangement of fibres, which alone allow of free motion to the members. In the articulations of the immovable bones, the *periosteum* is continued from one bone to the other, and is more intimately connected at the place of their junction, than to any other part. On the contrary, in the movable articulations, the opposite surfaces of the bones are free and distinct: each is covered with a smooth and polished cartilage, and the interval is occupied by a

B 2

mucilaginous

mucilaginous or slippery fluid called *synovia*, which issues from certain glands situated near each joint, for the purpose of diminishing the friction.

The bones which compose the skeleton present three principal divisions; the head, the trunk, and the limbs or extremities. In the quadrupeds the *head* is never wanting. It is placed, (as before observed,) at the anterior extremity of the vertebral column; and has a free motion in various directions. It is composed of, first, the *cranium*, which contains the brain, and in the partitions of which are situated the cavities of the internal ear, and frequently part of those of the nose; secondly, the *face*, which contains the orbits of the eyes, and the nasal cavities, and terminates below in the upper jaw; and, thirdly, the *lower jaw*. This last is always movable, and from its motions, in aiding the mastication of food, is to be considered one of the most important members of the animal body. The elongation of the head of quadrupeds increases in proportion as they recede from man; and this elongation in most of them is such that, were they to stand upright, the head could not be preserved in equilibrium, unless the mouth were turned upwards, and the eyes turned back. When standing on its four feet, the head of a quadruped is not, like that of man, capable of being retained upon the spine by its own weight, but is principally kept in its place by a peculiar ligament at the back, (wanting in man,) called the *cervical ligament*. In the base of the skull there is a large hole, through which the brain unites with the spinal marrow.

The *trunk* is formed by the dorsal spine, the ribs, and the breast-plate or *sternum*. The *dorsal spine* is a sort of column, formed by a number of bones, called *vertebræ*, which are joined to each other by ligaments that admit of a slight degree of motion. Those *ribs* which proceed from the *vertebræ* and join the *sternum* are denominated true ribs; and those

those which do not extend so far as the sternum are called false ribs.

The *limbs*, or extremities, are each divided into four parts. Those which belong to the anterior extremities are the shoulders, the arm, the fore-arm, and the hand; and those which belong to the posterior extremities are the hip, the thigh, the leg, and the foot. The *shoulder* consists of the *scapula*, or blade-bone, which is placed against the back; and the *clavicle*, or collar-bone, attached to the *sternum*. In several of the quadrupeds the latter is wanting; but it is always found in those which occasionally use their fore-feet as hands. The *scapula*, however, is indispensable in all, since the shoulder bone is articulated into a hollow in its anterior angle. The *arm*, which extends from the shoulder joint to the elbow, is composed of one bone only; but the *fore-arm*, which extends from the elbow to the wrist, has two. The *hand* varies with respect to the number of its bones, in the different species of animals; but the bones which exist in it always form a wrist, the body of the hand, and the fingers. This organization prevails even in birds, which have their fingers enveloped in a skin covered with feathers. It likewise prevails in the amphibious quadrupeds, and the *cetacea*, in the latter of which the whole of the anterior extremity is reduced externally to the shape of an oar or fin.

The fore-legs and feet of quadrupeds, besides being instruments of motion, are of use to them in several other respects. The predatory species employ them in seizing and retaining their prey; the monkeys and most of the *Glires* in conveying food to their mouth; the Moles and other subterraneous kinds, in digging habitations under the surface of the ground; and, by means of a thin membrane which connects the greatly elongated fingers, and extends round the hinder part of their body, the bats are enabled to rise into, and flit

through the air. They are generally shorter and more weak than the hind-legs; and in some of the animals, as the Kangaroos and Jerboas, they are so extremely short, as scarcely to be of any use in walking. In the long-armed Ape, and the Giraffe, their length is, however, considerably greater than that of the hind legs.

With respect to the posterior extremity of quadrupeds, the two hips, united into the *pelvis*, serve as a support to the intestines. Into a hollow in each of the hips is articulated the head of the thigh bone. This bone is single; but the leg, which extends from the joint of the knee to the foot, has two bones, the larger called the *tibia*, and the smaller, (which is on the exterior side of this,) denominated the *fibula*. Over the articulation of the thigh bone with the tibia, in some of the animals, there is a little bone, almost of a circular shape, but somewhat pointed below, placed for the purpose of preventing the *tibia* from being extended in front beyond a right line. This is called the *patella*, and is the bone that forms the angle of the knee. The ancle and the foot have a general resemblance in their external appearance, and in their uses, to the wrist and hand. The toes of all the feet are armed, at their extremities, either with nails or claws, or are enveloped in hoofs. A few of the animals, as the Seals and Otters, which live much in the water, have their toes connected together by strong membranes, to serve the place of fins or oars in swimming.

In addition to the preceding four extremities, most quadrupeds have a *tail*, or fifth extremity. The Apes, some of the Bats, the Guinea-pig, and some others, are, however, entirely destitute of this member. It seems given to them chiefly to serve the purpose of a whip, to drive away some of those swarms of insects with which, in hot climates particularly, they are often teased; and also as a covering, to guard the posterior parts of their body from injury. In a few

few of the quadrupeds it is long and prehensile, or capable of being coiled round objects, to supply the place of a hand in fastening or suspending themselves. The tails of most quadrupeds are covered with hair: those of some of the *Glîres* are naked, or covered with scales, and thinly scattered with hair. The tails of the Armadillos are composed of horny rings.

The *flesh* of quadrupeds is composed of vessels, fibres, and nerves, and has the denomination of *muscles*. Each muscle is made up of many fibres, united together into little bundles, and appears red and soft, from the blood with which it is constantly drenched. The fibres at the extremities of the muscles are called *tendons*: they are closer and more firm than the others, and are of a silvery white colour. It is by means of these that the muscles are attached to the bones. Their substance is almost entirely gelatinous; and, in a healthy state, they possess neither sensibility nor irritability.

The muscles are the organs of motion; and when the body is in a state of health, the will exercises a constant and prompt power over them. A small number, however, are not subject to the influence of the will. These produce internally the movements which are necessary to life, and which cannot be interrupted; such as the motion of the heart and the intestines. The motion of some other muscles, as those connected with respiration, appears to be of a mixed nature; we can stop their action, but their motion is continued by habit, without our formally willing, or without our being even conscious of it.

Each muscle is inclosed in a thin covering called *cellular membrane*. This descends into the substance of the muscle, connecting and surrounding the most minute fibres, and affording a support to the vessels and nerves. The muscles

are surrounded on all sides by *fat*, which is also spread betwixt their bundles of fibres, and betwixt the small fibres themselves, which lie contiguous to each other. This fat, being pressed out by the turgescence of the muscles and their fibres, tends to render them soft, flexible, slippery, and fit for motion: and gives to the body its softness and beauty, at the same time also that it protects from injury, and keeps warm several of the more tender parts.

The Organs of Nutrition.

The function of nutrition commences in the *mouth*, into which the aliments are taken, and where, when they are solid, they are masticated, and moistened with the *saliva*. From thence they are passed into the alimentary canal for digestion. Mastication is performed by the teeth, aided by the motion of the tongue. The *jaws* are horizontal, and the mouth always opens, by their separation, from the front backwards. The *teeth* are inserted into cavities or sockets of the jaws. They consist of three different substances; of the proper matter or ivory, of bone, and of enamel. The ivory is produced from a pulpy, vascular matter, situated in the base of the sockets; and the enamel, which covers their upper external surface, is supposed to be a species of crystallization, and is arranged in regular *striae*. According to their situation in the mouth, they are denominated front-teeth, canine-teeth, or grinders. In their number and shape they are, of course, different in different animals.

The *front-teeth*, called also cutting-teeth, and *incisors*, have, in Men and Apes, a broad and sharp edge. In the *Lemurs*, and most predatory animals, they are sharp pointed. In the Dogs they are lobated. In the upper jaws of the Squirrels they are wedge-shaped, and in the under jaws compressed. In the Hares, Rats, and several others, they are long and subulated.

subulated. In the Horse they are blunt; and they are entirely wanting in the upper jaws of all the horned ruminating quadrupeds.

The *canine-teeth*, which have likewise the name of dog-teeth and eye-teeth, for the most part stand single on each side, betwixt the front-teeth and the grinders. They are usually pointed, somewhat bent, and often longer than the other teeth. In some animals there are two or more on each side: in others they are so concealed under the gum as often to be considered entirely wanting. In the Hog tribe they have the name of *tusks*, as they have likewise in the Elephant and the Walrus, where their length is often enormously great. In the *Babyrussa* they stand upward, and are so curved as to appear almost like horns.

The *grinders*, or molar teeth, have generally their upper surfaces blunt. Sometimes, however, they are hollowed in the middle; and sometimes, (particularly in such animals as are carnivorous, and do not masticate much) they have prominent incisive surfaces. The grinders of Seals have each three sharp points.

The jaws of all quadrupeds are furnished with *lips*, the chief uses of which are to cover the teeth and close the mouth in front.

The *tongue* is surrounded with glands which supply it with saliva, in quantity proportioned to the nature of the food under mastication. In most of the quadrupeds this member is of considerable breadth, but in some it is narrow and slender: in the Seals it is cleft at the end. The skin on the upper part of the tongue, in many animals that feed on vegetables, is covered with hard tubercles: in some it is aculeated; and, as in the animals of the Cat tribe, the prickles point backward towards the throat. The principal uses of the tongue are, to serve as an organ of taste; to direct the aliments betwixt the teeth for the purpose of being masticated; and lastly, after the mastication, to guide them in their passage down

down the throat. To most animals it is likewise useful in other respects, serving, for instance, to clean their fur, and when wounded, to anoint their wounds with *saliva*. The structure of this member, as an organ of sense, will be mentioned hereafter.

The *alimentary canal* commences at the mouth, and extends, through the interior of the body, to a termination at the opposite extremity of the trunk. Its first part, which descends along the neck and breast, is denominated the *œsophagus*, or gullet. After it has entered the *abdomen*, or lower belly, it is dilated into a large sac, or bag, called the *stomach*, the anterior orifice of which has the name of *cardia*; and the posterior, of *pylorus*. The remainder of the alimentary canal is more particularly called bowels, or *intestines*.

The *parietes* of this canal are composed of several coats, or tunics, analogous to those which form the external teguments of the body. These coats act in a mechanical manner on the substances which they contain, by slight contractions of their fibres; and in a chemical manner, by the liquors which are poured out within them. The *parietes* of the stomach yield a liquor called the *gastric juice*, which reduces the aliment to an homogeneous pulp. But, independently of the juices which the different coats of the bowels produce, there are some that are separated from the mass of the blood by glands, and which penetrate the intestinal canal by particular conduits. The most remarkable of these glands are the *liver*, and *pancreas* or sweet-bread.

All the remaining animals have their stomach so divided as to form four distinct cavities. This is likewise the case in the Seals; and the stomach of the Porpesse, Grampus, and Pike-whale, has five divisions. In carnivorous animals it is simple, and so little extended as to appear rather a dilatation of the intestines than a distinct sac. The consequence
of

of this is, that the food is not long detained in it, but passes quickly forward towards the other intestines.

It is in the intestines that the aliments undergo that change which fits them for nutrition. The nutritive part is absorbed, during the act of digestion, by very small vessels which conduct it into the circulation. These vessels are called *lacteals*, and are furnished internally with valves, all opening in a direction towards the heart, in which direction the fluid they convey has to flow. The *chyle*, or white liquor produced by digestion, after having come in contact with the air in the organs of respiration, mixes with the blood, and is rendered fit for the nutrition of the different parts of the body.

In the human subject, the intestines form a canal, usually six times longer than the body; and although this is but one long circumvolved tube, the upper portion has the name of small intestines, and the lower of large intestines. In quadrupeds this canal varies considerably in its structure, according to the different kinds of food on which the animals subsist. On this likewise depends its length. In those that are carnivorous it is short, but in the herbivorous and granivorous animals it is generally very long.

The small intestines are divided by anatomists into three parts, called the *duodenum*, *jejunum*, and *ileum*; and the large into two, called the *colon* and *rectum*. At the beginning of the *colon* is a gut, closed at one end, and hence called the *cæcum*. This appendix to the intestinal canal is generally empty. In dogs, and some other animals, it is very large; but in man, though it is usually ranked among the great intestines, its size is diminutive.

After the digestion is completed, the alimentary matter is moved through the intestines by the successive contraction of the fibres of their muscular coats, which produces a slow motion, somewhat similar to the crawling of a worm, and called

called the *peristaltic motion*. After having been mixed with the bile and the liquor supplied by the pancreas, and had the chyle separated, it traverses the remainder of the canal, and is then expelled from the body.

The *liver* is a large glandular body, given for the secretion of the bile. It is of a reddish brown colour, of a firm consistence, and is furnished with a bag, (which contains the bile,) called the *gall-bladder*. It generally consists of two lobes, or divisions: but in the Lion it has seven. The bile has been considered by most physiologists as a stimulus for creating the peristaltic motion. When the stomach is distended with aliment, the gall-bladder undergoes a certain degree of compression, and the bile, in consequence, passes out into the intestinal canal, to perform the above-mentioned office.

The *pancreas*, or sweet-bread, is a whitish oblong gland, situated behind the bottom of the stomach. In the human subject it is about six inches long, two and a half wide, and somewhat more than half an inch thick. The liquid produced from this gland is limpid and tasteless, not unlike mucilage dissolved in water. Its use is supposed to consist in diluting the alimentary pulp, for the purpose of incorporating it more easily with the bile.

The *spleen* is a thin body, composed of membranes filled with blood, and, in all the mammiferous animals, is situated betwixt the ribs and the stomach. From the relative situations of the spleen and stomach, it is supposed that this member is chiefly of use in regulating the supply of blood for the necessities of the stomach: for when the stomach is full, by pressing upon the spleen, it forces more blood into itself than it requires at other times. In the carnivorous animals, the cells of the spleen are small: in the graminivorous animals they are larger; and, in those which ruminate, their size is very considerable. The Porpesse has generally

generally four, five, six, or seven spleens, and many pancreatic glands.

The Organs of Respiration and Circulation.

In the bodies of all mammiferous animals there are three principal cavities; the head, the *thorax* or chest, and the *abdomen*. Of these it is the chest which contains the organs necessary to respiration and circulation. This cavity is separated from the abdomen by a strong membranaceous partition, furnished with muscular fibres, called the *diaphragm*. It contains the heart, the lungs, the *trachea*, or windpipe, and the *æsofagus*, or gullet.

The *heart* is situated in front of the chest, betwixt the two lobes of the lungs. It is composed of muscular fibres, and is the engine by which the blood is driven through the arteries for the support and nourishment of the body. Its basis, from which the great vessels arise, is generally covered with fat; and it has two hollow and fleshy appendages, called *auricles*. It contains two cavities, divided from each other by a fleshy *septum*. One of these is denominated the *right*, and the other the *left ventricle*; but in the human subject, where the position of the heart is different from that of quadrupeds, the ventricles might be more appropriately denominated anterior and posterior. From the contraction of the left ventricle the blood is forced into the *arteries*. These carry it to the remotest parts of the system; and it is conveyed back to the heart by another set of vessels, denominated *veins*, through their common trunk, the *vena cava*, which terminates in the right auricle. This last communicates with the right ventricle by an opening, where are valves disposed in such a manner as to permit the blood to enter, but not to return. At the bottom of the *aorta*, or trunk of the arteries, there are three valves, which open only
upwards

upwards, and which serve to prevent the blood from returning into the ventricle.

The terminations both of the arteries and veins are exceedingly minute. It is from these that the blood deposits its molecules, destined to replenish the solids, and that various kinds of humours are filtrated. From the constant motion of the juices, from the friction of the solids on one another, and from other causes, many particles are lost. These are repaired by the circulation of the vital fluid. If the nourishing particles that are added be more than those that are lost, the body is said to *grow*; that is, the fibres of which the solids consist become gradually more and more enlarged. Growth, however, has its bounds, at which it stops: for when, by continual nourishment, the fibres are rendered thick and hard, the interstices at length are so filled up, and the fibres become so close, that no nourishing particles can pass between them, and consequently the body ceases to grow. At last the vessels become so gross that the juices cannot force their way through them, but remain thick and unelaborated. Their motion grows languid, and when at last it stops, the body ceases to live, or *dies*. For a little while after death it retains its organic structure; but the parts soon begin to separate and decompose: they fall down, and take their place in the mineral kingdom, from which they were originally formed.

The blood, in its circuit through the body, does not return to the heart till it has passed through the *lungs*. Here, in its contact with the air, it undergoes a process which is absolutely necessary towards rendering it capable of affording the proper nutriment to the system; and it is in consequence of this process that it attains that heat which it afterwards communicates to all the different parts of the body. After the blood has passed the lungs it is of a vermilion colour, and frothy consistence: but, when on its
return

return through the veins, its nutritive particles have been discharged, it becomes livid and heavy; and it is only by repassing the heart and lungs that it can regain its former state. The lungs of all the mammiferous animals, as in the human subject, are divided into lobes, lobules, and minute cells, upon which the small branches of the pulmonary arteries are spread. Each of the cells has a tube; and all the tubes of each lobe communicate with one another in the *bronchiæ*, and at last terminate in the *trachea*, or windpipe. Both the windpipe and the *bronchiæ* are kept in an expanded state by elastic cartilaginous rings; so that when the chest is dilated, the external air is enabled, by its own weight, to force itself into all the cells of the lungs. The air is driven out by the contraction of the chest.

Besides their use in respiration, the lungs of the mammiferous animals are also necessary for the production of sound. The upper part of the windpipe is denominated the *larynx*; and in the centre of this is situated the *glottis*, which, with its adjacent parts, forms the principal *organ of the voice*. The *glottis* is capable both of extension and contraction; and when the air, in expiration, is forced from the lungs, and pressed so quickly into the mouth through the contracted *glottis*, that its fibres are made to vibrate and communicate their vibrations to the *larynx*, sounds are produced. The greater or less shrillness of these depends upon the *larynx* being drawn more or less forward. The sounds are afterwards modulated by the cavity of the mouth and the peculiar motions of the tongue. At the *larynx* of all the quadrupeds there is a cartilage called the *epiglottis*, which is pressed down by the food, in its way to the gullet, and thus prevents it from entering the windpipe to obstruct the breath. No animals, except those which have true or cellular lungs, can be said to have any voice. The inferior tribes, although they have no true voice, are not, however, deprived

deprived of the power of uttering certain sounds; but these are produced by other means.

The Organs of Sensation.

The head contains all the parts that are most necessary towards sensation; namely, the brain, the principal nerves, and the organs of seeing, hearing, smelling, and tasting. Sensation is generally believed to be an action commencing at the extremity of the nervous system, and thence communicated to the *sensorium*, or that part of the brain where the nerves are united. The degree of sensibility in animals has, by many writers, been believed to be greatest in those whose brain bears the greatest proportion to the whole weight of their bodies. This however can only hold good, at most, as a general rule, since it has very many exceptions. Professor Camper considers that it may be determined by measuring the facial angle, or the angle formed by the junction of two lines, one drawn from the forehead through the teeth, and the other through the basis of the skull. The ancients seem to have had some idea of this theory, since, in the statues of their gods and heroes, they always made the facial angle even greater than a right angle.

In all the quadrupeds, the *brain*, which is an homogeneous, pulpy substance, contains precisely the same parts as in men; and those parts are likewise disposed in a similar order. Its exterior is of a reddish colour, from the numerous blood vessels and nerves that are disposed on its surface; but within, where these do not penetrate, the colour is a pure white. It is from the brain and the spinal marrow that the *nerves* have their origin; and these three form the common organ of sensation and volition. As it is impossible to describe intelligibly the very delicate structure of the brain, without either actual inspection, or accurate engravings of
all

all the parts, this must here be omitted. The elongation of the brain, through the large hole in the base of the skull, is denominated *medulla spinalis*, or spinal marrow. This, externally, appears to be composed of a white substance; but internally it assumes a greyish tinge. Its form is that of a cylinder somewhat compressed; and it seems to be composed of two cords, divided on each side by a furrow. The spinal marrow gives origin to as many pairs of nerves as there are holes between the vertebræ. In the human subject, nine pairs of nerves arise from the brain, and thirty-one from the spinal marrow.

The first pair of nerves issuing from the brain are those which constitute the organ of smell. The second, called the optic nerves, are the principal organ of sight. The third, the fourth, and the sixth pairs, serve to move the muscles of the eye. The fifth, which are large, and each divided into three branches, are distributed over the eyes, eyelids, forehead, nose, and the integuments of the face. The seventh pair constitute the organ of hearing. The eighth extend over the interior parts of the *thorax* or chest, and *abdomen*; and the ninth pair extend to the tongue, where they constitute the organ of taste, and likewise contribute to the motions of that member. The thirty-one pairs of nerves which issue from the spinal marrow are chiefly distributed to the exterior parts of the trunk, and to the extremities.

The *eye* is a spherical body, composed of various coats, filled with different kinds of humours, and moved, within the socket that contains it, by means of muscles. The external coat is a thick, opaque, and whitish membrane, called the *schlerotis*; but its anterior part is transparent, and forms the segment of a smaller sphere, called the *cornea*. Under this lies the *choroid coat*, a fine membrane, covered with numerous blood vessels, and coloured interiorly, in the human subject, by a blackish pigment. It terminates in

front by an annular membrane, denominated the *iris*, having an opening in the centre, capable of contraction or dilatation, according to the greater or less quantity of light by which it is affected, and called the *pupil*. Behind the choroid coat lies the *retina*, a reticulation of the finest nerves and blood vessels, that take their rise from the *optic nerve*. These coats contain what are called the humours of the eye: but of these only one, the *aqueous humour*, which lies in the anterior chamber, behind the cornea, is a true fluid. The *vitreous humour* is soft, and included in a transparent membrane. The *chrystalline humour*, or lens, consists of concentric plates or scales, connected by cellular fibres: it is also contained in a pellucid membrane.

This delicate organ, the eye, lies embedded in a deep socket, and is well fortified from injury by its surrounding parts. The bones defend it on all sides, except immediately in front, where there are eyelids, which are always closed during sleep; and which, on the approach of any danger, fly together quicker even than thought. The *lachrymal gland*, situated in the upper part of the orbit, produces the tears which wash the front of the eye, and which, by the continual motion of the eyelids, keep it at all times perfectly lubricated. The eye-lashes prevent the intrusion of such minute objects as might otherwise injure the eye; and these, with the eye-brows, tend to break and moderate the force of the light.

Some quadrupeds, as a few of the Monkeys, the Seals, the Bears, &c. have, like the birds, an internal covering to their eyes, called by anatomists, *membrana nictitans*, or the winking membrane.

The *ear* consists, for the most part, of elastic cartilages, and hard bones, about which the auditory nerve is interiorly expanded. The external part is cartilaginous, and wrought at the bottom into irregular bends and hollows, which collect

lect the sounds, and transmit them to the fine membrane called the *tympanum*, or drum, which is expanded upon a circle of bones, over a polished reverberating cavity. This part is affected by the vibrations of the external air, much in the same manner as a drum is by the motion of the sticks upon it. It is also furnished with braces, which strain or relax it, as necessity requires, and thus accommodate its tension either to loud or languid sounds.

Nearly all quadrupeds, except the Seals and Manati, have an external ear, which is furnished with muscles, and consequently is more or less movable. The size of the external ear is proportioned to the size of the head, and the necessities of the animals. Those that are most defenceless have always a very quick sense of hearing. In some of the Bats, the external cartilage or valve is proportionally longer than in other animals; and contains a second valve, in front of the orifice, so as to give the animals the appearance of having double ears.

The organ of smell lies in the *pituitary membrane*, which lines all the internal cavity of the nostrils. This is provided with numerous vessels and nerves, and is continually moistened by a mucous humour. As the nostrils communicate behind with the throat, the air, in passing through them to the *trachea*, carries along with it the volatile and odoriferous particles which excite the actions of this organ.

The sense of taste lies chiefly on the upper surface and edges of the tongue, which is a fleshy body, supplied with many nerves. These terminate on the upper surface in numerous *papillæ*, which are properly the organs of taste. Betwixt the nerves there are certain minute vessels that supply the *saliva*: this keeps the tongue and mouth always moist, and is of indispensable use in masticating the food.

The sense of touch, although it is found over the whole superficies of the animal body, should be considered

as belonging chiefly to the extremities, which have large nerves, and a very vascular skin. In men, this is confined to the extremities of the upper limbs; whilst the Apes and Monkeys have it in all their feet. The lips of quadrupeds have likewise this structure, as well as the snouts of the Hog, the Hedgehog, Shrew, Mole, &c. and the *proboscis* of Elephants, in all of which the sense of touch is supposed to be greatly finer than that in the human hand.

All the mammiferous animals are covered or enveloped externally with a *skin*, consisting of an upper, thin, white, and elastic layer, denominated *epidermis* or cuticle; and, beneath this, a much thicker layer, composed of numerous fibres, closely interwoven, and disposed in various directions, called the *cutis*, or *true skin*. Through the pores of the skin is continually, and insensibly, discharged an extremely subtile fluid. These pores, in the human body, are so minute, that a grain of sand will cover more than a hundred thousand of them; and their daily discharge of fluid has been calculated at upwards of three pounds weight. In most of the quadrupeds the skin is hard to the touch, and thickly clad with *hair*. Each of the hairs is placed in a capsule or socket, and springs from a bulb at its lower extremity: There is, in this bulb, a vascular pyramid, upon which the hair is formed, and by which it is generally rendered tubular. The hair grows continually, but it usually falls off and is renewed once, and sometimes twice, in the year. Concealed by the long hairs of most animals, there is a short kind of down or wool, spread over the whole body, and rising immediately out of the skin.

With respect to the structure and appearance of the long hair of different quadrupeds, we may remark, that each of the hairs of the common Seal is waved: that those in the tail of the Elephant are forked at the extremity. In some animals, as the Squirrel, the Water Rat, and Meadow Mouse,

Mouse, the hairs are composed of rings: in the Opossum they are knotted: in the Water Shrew they are both annular and knotted: and in the Field Mouse they are set laterally with smaller hairs.

I cannot conclude this introductory essay without remarking, that all the parts of the animal frame afford very decisive proofs of the superintendence and wisdom of a Divine Power. How, beyond all comparison, are our astonishment and admiration excited, when we contemplate the wonders of nature, in competition with the puny efforts of human ingenuity. Whether we consider the skeleton or frame-work of the body, varying as it does in different animals precisely according to their necessities or wants; the muscles and tendons which clothe this skeleton, connect its parts, and, at the instigation of the will, put it into motion; the manner in which these are renewed, as they wear away, by nutrition and circulation; or, beyond all, the beautiful contrivances by which so complicated and delicate a structure is kept in order through life: we are compelled to acknowledge, that they could only have been formed by a Being infinite in goodness and in power, the traces of whose workmanship are visible through every part of them. We must be infatuated indeed, if we can for a moment believe that all this excellence is the mere effect of chance. "If with 10,000 dice, (says an elegant and distinguished writer of the last century,) we should always fling the same number, or see, after every throw, just five times less, or five times more, than the number in the throw which immediately preceded it, who would not imagine that some invisible power directed the cast? Yet this is the proceeding that we constantly find in the operations of nature. And it is much more probable, that an hundred millions of dice should be casually thrown an hundred

millions of times the same number, than that the body of any single animal should be produced by the fortuitous concourse of matter."

"O LORD, GOD!

How manifold are Thy works!

In wisdom hast Thou made them all!

The earth is full of Thy riches!"

ORDERS
OF
BRITISH QUADRUPEDS.

PRIMATES.

Bats.

THE primates are inhabitants chiefly of hot climates. Apes, Lemurs, and Bats, are the principal tribes; and of these, only a few species of the latter are natives of the British islands.

They have all three kinds of teeth in each jaw; namely, four front-teeth or incisors, two canine-teeth, and several grinders. On their feet they have nails or claws. Their liver is divided into lobes, and they are each supplied with a gall-bladder, and a thin spleen. The females have usually only two teats, which are situated on the breast: some of the Bats, however, have four, two on the breast, and two on the belly. The clavicles, or collar-bones, and the pectoral muscles of the latter, are peculiarly large and strong: none of them have any cœcum.

FERÆ*.

*Seals, Dogs, Cats, Weesels, Otters, Bears, Moles, Shrews,
and Urchins.*

Some of these animals are carnivorous, and others subsist principally on fruit, roots, and herbs. The former have, in each jaw, six front-teeth or incisors. Their canine-teeth are in general strong, and, in some of the species, of such size as to resemble tusks. The grinders are, for the most part, armed with sharp and cutting prominences on their upper surface. Several of the species, as Cats, Lions, Tigers, and Lynxes, have sharp and hooked claws.

The Seals differ very essentially from other animals of this order, in being amphibious, and passing the greater part of their life in the sea, where they live chiefly upon fish. Their bodies are elongated, broad at the shoulders, and gradually taper, till they terminate almost in a point behind. The toes are connected by strong membranes, so as to have much the appearance of fins.

Moles, Shrews, and Urchins, are not carnivorous; nor, in any other respect, rapacious animals. These, and the Bears, are peculiar in applying the whole sole of their feet to the ground in walking, and not, as in most other quadrupeds, treading upon the toes only.

In all the species, except the Urchins, the bodies of the animals are covered only with hair; but these have, on their head and back, sharp and strong spines, intermixed with bristles. The hair of the Moles and Shrews is par-

* None of the animals of the second Linnean Order, BRUTA, are native inhabitants of our islands.

ticularly short and fine, softer to the touch than even the finest velvet: that of the Bears is in general long, coarse, and shaggy.

The carnivorous species have their alimentary canal proportionally much shorter than such as live on vegetable food. The cœcum is small in two of the tribes, and is entirely wanting in all the rest. The liver is divided into lobes; and all the species have a gall-bladder and thin spleen. The Bears, Moles, Shrews, and Urchins, have perfect clavicles, or collar-bones. The greater part of the others have only clavicular bones suspended in the flesh; and even these are wanting in some individuals. The teats of the females are several in number, and are arranged on each side along the belly.

GLIRES.

Rats, Squirrels, Dormice, and Hares.

The Glires, or nibblers, are, in general, animals of small size, but great activity. They are chiefly characterized by having, in each jaw, two remarkably large and long front-teeth. This organization of the mouth compels them to gnaw their food, or to reduce it into very small fragments, instead of cutting it into mouthfuls, as is done by such animals as are furnished with short incisive or cutting-teeth. These long teeth are separated from the grinders by a vacant space, and are by no means calculated for seizing living prey. The Glires feed very variously. Some live chiefly on grain; others on fruit and herbs; and others on the bark, or tender branches of trees. Some eat the kernels of nuts, which they get at by gnawing holes through
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the hard shells that contain them. A few of the species may be considered as omnivorous, since they will devour, with avidity, almost all kinds of substances, both animal and vegetable. Their front-teeth grow again as fast as they are worn down by gnawing. Those of the animals which subsist entirely on vegetables, have their grinders flat on the crown; but such as feed on mixed animal and vegetable substances, have the crowns of the grinders elevated into blunt tubercles, or sharp points, according to the general nature of their food.

Most of the Glires have a perfect thumb on each of their feet; but in the Hares this is very short, and in the Rats and Squirrels it is so diminished, as to have only two phalanges or joints. The toes of Rats, Squirrels, and Hares, have only the two last joints separate.

In the form of their bodies the Glires have this peculiarity, that their hinder parts are generally more elevated than the shoulders, from their posterior legs being longer than the anterior ones. It is in consequence of this disproportion of the limbs that the animals do not, in fact, either walk or run, but perform their motions by a succession of leaps.

All the British species have their bodies covered with hair.

The intestines of the Glires are generally very long. Their stomach also is long and simple; and the cœcum extremely voluminous, sometimes even larger than the stomach. Squirrels and Rats have their clavicles, or collar-bones, perfect: Hares have these suspended in the flesh.

PECORA.

Deer, Goats, Sheep, and Oxen.

Pecora, or cattle, have their toes so enveloped in horn, that their feet are capable only of serving them in progression; and occasionally as offensive weapons against their foes. The two large hoofs are each of a triangular shape: their outer surface, or that which extends round the front of the toe, is hard, convex, and smooth; whilst the under surface is softer, and appears to be somewhat tuberculated. Besides these there are two other hoofs, which do not touch the ground when the animals walk, but which, nevertheless, each envelope a toe that is perfect in regard to the number of bones composing it. On each of the feet there is likewise a small bone, the rudiment of a thumb.

As the Pecora subsist exclusively on vegetable food, they have, on the upper surfaces of their grinding teeth, round and callous eminences, peculiarly well adapted to the mastication of herbs. In the lower jaw they have eight front or cutting-teeth, and none in the upper jaw; but the place of the upper teeth is admirably supplied by a bony substance which there forms the gum.

Many of the species are gregarious, or collect together in immense herds. They are, in general, harmless and inoffensive animals; but, when roused to fury, they have strength enough to prove themselves formidable enemies. Their chief weapons are their hoofs and horns.

The stomach of the Pecora is generally divided into four distinct cavities or bags: Deer, however, have but three. The food passes immediately from the mouth into the

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the paunch or first stomach, where it is macerated for a while, and from whence it is again passed into the mouth. Being remasticated, it next descends into the reticulate stomach, through a canal, the sides of which contract in such manner as to form a perfect tube; and from thence to the plicous and digestive stomachs. In full grown animals, the paunch is always much larger than any of the other stomachs; but in young animals the digestive stomach is largest. This arises from the milk which they draw from their mother not requiring to be re-masticated like other food. In all the animals, both the intestinal canal, and the cœcum, are of great length. None of them have any gall-bladder.

Their flesh constitutes an exceedingly palatable and salutary food. Their hair and skin supply mankind with clothing; and their fat, horns, hoofs, and blood, are all employed for useful purposes. The Deer and Oxen have in general short hair: that of Sheep, which has the peculiar denomination of *wool*, is long, and distinguished by a crisped or frizzled appearance.

BELLUÆ.

Horses and Swine.

The animals of the present order, like those of the last, have their toes enveloped in such manner by horn, that their nails have the denomination of hoofs. Swine have two of these hoofs on each foot, and horses only one.

The mouths of all the species are furnished with wedge-like, truncated cutting-teeth in both jaws; and, in addition to these, the Swine have, in each jaw, two long tusks. Their
intestines

intestines are very long. The stomach of the Horse is small and simple. The stomach and cæcum of swine are each peculiarly large; and the former is divided, by certain contractions, into several cavities. None of the animals ruminate; nor have they any clavicles or collar-bones.

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BRITISH QUADRUPEDS.

PRIMATES.

OF BATS IN GENERAL.

THESE animals were the cause of much perplexity to the ancient naturalists. The Bats were ranked by them as birds, under the denomination of *aves non aves*, “birds, and yet not birds.” Nor was it till towards the close of the seventeenth century, that they were decidedly ascertained to have place amongst the viviparous quadrupeds. They have no alliance with the feathered tribes, further than what arises from the circumstance of their being able, in common with those, to raise themselves into the air. They have neither feathers nor beak, but their bodies are clad with hair, and their mouths are furnished with teeth; and, instead of producing eggs, like birds, they bring into the world living offspring,

offspring, which, in the manner of all other quadrupeds, they suckle by means of teats.

What are denominated wings consist only of an extremely thin, light, and delicately formed membrane, which extends from one shoulder, entirely round the body of the animals, to the other; connecting the fore and hind legs, and (in the tailed Bats) the tail. This, from its thinness and flexibility, is capable of being contracted, at pleasure, into numerous wrinkles, (so as to lie in small compass when the animals are at rest,) and of being stretched to a very wide extent for their occasional flight. An attentive examination of the skeleton of a Bat will immediately show, that the principal bones, which extend, in different directions, through this membrane, are those of real hands—are fingers very greatly lengthened, for the purpose of supporting and directing it. These are four in number on each side; the fifth toe, or, as perhaps it may with more propriety be called, the thumb, is short, distinct from the fingers, and furnished at the end with a sharp and hooked claw, by means of which the animals are enabled to hang upon hard substances with considerable tenacity.

In order to give motion to their membranous wings, and enable the Bats, by means of these, to rise into the air, their clavicle, or collar-bones, are peculiarly thick and strong, and the pectoral muscles are proportionally larger and more fleshy than those of any other quadrupeds. When a Bat is deprived

deprived of its skin the latter are peculiarly observable; and are the more striking, from the abdominal parts being singularly weak and slender.

Bats conceal themselves, during the day time, in holes of caverns or old buildings, from whence, as soon as the evening approaches, they issue in search of prey. The English species feed on insects, and particularly on gnats, ephemera, and various kinds of moths, which, during the evening and night of the summer months, are found in abundance in the air. To enable the animals to catch their prey with greater facility, their mouths are so wide as to extend almost from ear to ear. Like Swallows, they drink whilst on wing, by sipping the surface as they play over the pools and streams.

The females produce their offspring about midsummer. These, which are usually two in number, are at first perfectly naked. By the old writers they were thought to have some resemblance in shape to human infants. They are suckled by teats situated on the breast of the dam; and from the moment they come into the world, they cling to her body with such singular tenacity, that they are not to be shaken off, even by her flights in search of food.

As soon as the cold evenings of the autumn commence, most of the species retire to their deepest recesses, and are no longer to be seen abroad. Here they remain during the winter, often collected in great numbers, to defend themselves

selves from the chilling effects of the frost. During their continuance in this state of torpor, the animal functions are so far suspended as scarcely to be perceptible. The action of the heart and arteries become exceedingly languid; and respiration is scarcely distinguishable. Digestion is altogether at a stand; and none of the functions seem to be going on, except a very slow degree of nutrition, and an interchange of old for new matter, in the depository cells of the body. This last circumstance is proved by the animals' entering into the torpid state very fat, and reviving excessively emaciated; and from this it appears that the oil, in the fatty follicles of the cellular membrane, is gradually taken up by the absorbent vessels, into the languid circulation, to supply the proportionally gradual waste, occasioned by the more than half suspended action of the emunctories*.

Since, in the Bats, the fingers are not capable of grasping solid bodies, from their being inclosed between two fine membranes, these animals do not possess, in any high degree, that sense of touch which serves to ascertain the forms of bodies. The extensive surface, however, which the membranes present to the air, fit them for receiving such delicate impressions of resistance, motion, and temperature, that some authors have been induced to ascribe to these creatures an additional sense. In a

* Kerr's Animal Kingdom, i. p. 94.

series of experiments, first instituted by the learned and justly celebrated Spallanzani, it was discovered that Bats, when perfectly blinded, and in that state set at liberty, could, notwithstanding, conduct their flight through subterraneous passages without striking against the walls; that they turned exactly as the most complicated windings required; and that they even avoided, with great exactness, cords, branches of trees, and other obstacles which had been purposely placed in their way.

This accuracy of motion could not be obtained by sight, (in the eyes being imperfectly covered,) for, in one series of experiments, the organs of sight were entirely destroyed. It could not arise from hearing; for the ears of several individuals had been completely stopped. Nor could it at all be owing to the smell; for, in others, the aperture of the nostrils was closed. Spallanzani, by whom all these experiments were made, concluded, therefore, that Bats possessed an additional or sixth sense, of the nature of which, he says, mankind cannot possibly form any idea*.

When, however, the nature of the organs of touch, in these animals, is considered, it will probably be found to explain all the phenomena that have been mentioned. The bones of the fingers, as I

* The experiments were made on the Long-eared, the Noctule, and the Horse-shoe Bats. They are published in a "Memoire sur quelques espèces de Chauve-Souris," &c. &c. par l'Abbé Spallanzani.

have before observed, are excessively elongated. The membrane that unites them presents an enormous surface to the air. The nerves that are distributed to this membrane are numerous, and minutely divided, forming a net-work very remarkable for its fineness, and the number of its *anastomoses*. It is, therefore, more than probable, that, in the action of flight, the air, when struck by this wing or very sensible hand, impresses a sensation of heat, cold, mobility, and resistance on that organ, which indicates to the animal the presence of objects, which, if not avoided, would interrupt its progress. It is in a manner similar to this that blind men discern by their hands, and even by the skin of their faces, the proximity of a wall, of the door of a house, or the side of a street, without the assistance of touch, and merely from the sensation which the difference in the resistance of the air occasions.

Many of the Bats have on their nose a membrane, the use of which, in the animal economy, has not yet been ascertained. Spallanzani conjectured that it might be the seat of the additional sense which he attributed to these creatures. In some of the foreign Bats its shape is extremely singular and fantastical. This membrane is found in only one of the English species, the Horse-shoe Bat.

The ears of some of the Bats are very small; but of others extremely large. Many of these ears, from having an inner valve, for the purpose of keeping

keeping out extraneous substances during sleep, have the appearance of being double.

The whole number of Bats hitherto described, is twenty-five. Of these, five only have been found in the British dominions.

Mankind, from the earliest ages of the world, have indulged an aversion, not altogether warrantable, towards these animals. From their uniformly dark colour, and very singular appearance, connected with the circumstance of their haunting the most unfrequented buildings, and flying abroad only during the evening and night, they have been usually grouped in the same description with ghosts and hobgoblins. Fear is the parent of superstition, and operates with extensive influence when roused by objects which come abroad only in the midst of solitude and obscurity. Hence, likewise, the Bats, with several of the night-flying birds, have been considered as animals of evil omen. In the *Fairie Queene* we read of

The ill facte owl, deathe's dreadful messenger;
The hoarse night raven, trompe of doleful dreere;
The *leather-winged Bat*, daye's enemye;
The rueful strick, still waiting on the beere;
The whistler shrill, that whoso heares doth die.

Homer, in the true spirit of poetry, in which images drawn from superstitious terrors are often rendered extremely beautiful, has adopted these

animals in the mass; to illustrate the shrieks of his ghosts in the infernal regions:

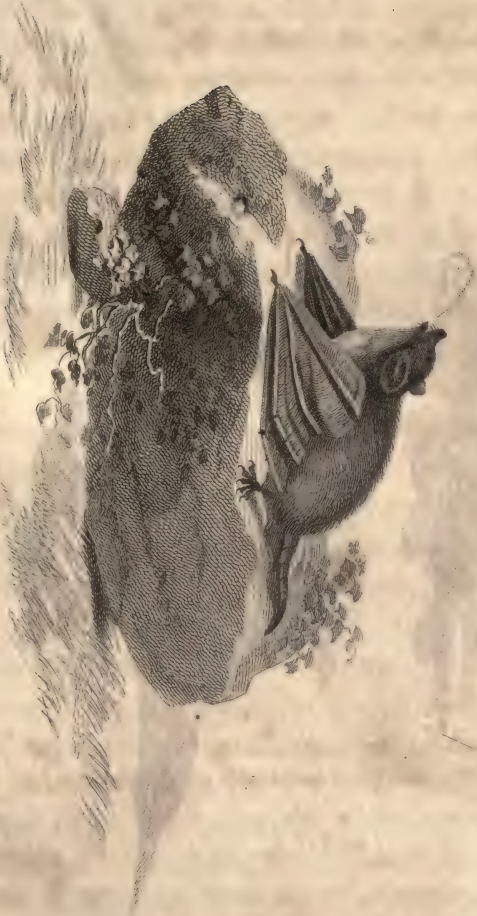
As in the cavern of some rifled den,
Where flock nocturnal Bats, and birds obscene;
Cluster'd they hang, till at some sudden shock
They move, and murmurs run through all the rock:
So cowering fleet the sable heaps of ghosts,
And such a stream fill'd all the dismal coasts.

THE COMMON OR LITTLE BAT*.
FLITTER-MOUSE, RERE-MOUSE, OR RANNER-MOUSE.

This is one of the two species of Bats which we so often observe, in the fine evenings of summer, flitting about in search of gnats and other insects. It commences its flight at the beginning of twilight, and haunts, principally, the neighbourhood of old or ruinous buildings, woods, and shady lanes. It generally flies near the ground, with an irregular and jerking kind of motion, and is not unfrequently to be observed skimming along just above the surface of rivers, in search of aquatic

* *Vespertilio murinus*.—Linnaeus. *La Chauve-souris*.—Buffon.

For the Description of this Bat, see the Synopsis, p. 4. No. 1.



Common Bat.

Pub. by W. Barton & J. Murray, September 1, 1848.

width 9 inches.



insects, which the hot evenings bring to life. Mr. Bill, of Christchurch, Hants, some years ago caught a Bat of this species with an artificial fly, as he was one evening about to angle for roach in the river Stour.

Perhaps none of the English Bats are so well able to bear the effects of cold as these. They are to be seen abroad, more or less frequently, in almost every month of the year. Even in the depth of winter they are sometimes roused from their torpid state, and venture out, as usual, in search of prey. I have more than once observed them in perfect vigour, in the early part of the month of December.

They are exceedingly voracious of their proper food; and will sometimes devour even raw flesh. The farmers in many parts of England assert that they occasionally descend the shafts of chimneys, and gnaw the bacon which is hung there to be dried in the smoke.

At different times I have had several of these Bats alive; but in the spring of 1804 I caught one, which, within an hour afterwards, had courage sufficient to take food out of my hand. I held one of the common house-flies in my fingers, in such manner as to touch the animal's nose, and rouse it from sleep: it made a kind of smack with its mouth, threw itself suddenly forward by its hind-feet, and immediately devoured the insect. I then caught for it one of the large blue flesh-flies. I touched its nose with this, as I had done with the former,
and

and the animal seized it precisely in the same manner. But, in the latter case, there was some difficulty. The fly was so large, that, notwithstanding the width of the Bat's mouth, it could not entirely have admission. My curiosity was excited to know in what manner it would so dispose the fly as to get it down its throat ; since its fore-feet were evidently useless for the purpose. I was soon satisfied. The animal, raising itself somewhat higher than usual on its fore-legs, bent its head with great dexterity under its belly, and forced the insect into its mouth, by thrusting it, from side to side, against that part of the membrane which extended betwixt the two hind legs. I cannot be mistaken in this particular; for, during the life of the animal, the experiment was often repeated. The manœuvre was, however, never practised, except where the fly was too large to be managed with facility by the jaws and tongue alone. This confirms what Mr. White has said respecting the actions of a tame Bat that he saw eat; but it leads us to a very different mode of accounting for them. His words are : " When the animal had any thing given to eat, it brought its wings round before its mouth, hovering and hiding its head, in the manner of birds of prey, when they feed*."

* White's Works in Natural History, i. p. 56. By the word *hovering*, Mr. White seems to mean a kind of tremulous motion, which is to be remarked in the animals during this process.

It is a vulgar notion, that Bats, when they are on a flat surface, have not the power of rising into the air; and that they must crawl to an eminence before they are able to expand their wings for flight. This is by no means true; for, of several individuals that I have kept, both of the Common and of the Long-eared Bats, there was not one that could not, with the greatest apparent ease, rise immediately from the floor of my room. One of the latter species, that happened to be peculiarly agile, could fly, without any difficulty, even from the bottom of a box that was four inches deep, and considerably less than six inches wide.

The Common Bats, like the rest of their tribe, breed in the summer, and produce two young ones at a birth, which they suckle from teats situated on the breast.

Towards the end of autumn they retire into caverns, or holes of old buildings or trees, from whence they do not often again come forth till the return of warmer weather. Here they suspend themselves by their four legs, having their head downward, and being closely enveloped in their wings.

For some time previously to their retirement, they are occasionally to be seen in the evenings, collected together in great multitudes. Mr. White, in going from Richmond to Sunbury, on a very warm autumnal evening, saw an immense number of Bats betwixt the two places. He says that the
air

air literally swarmed with them all along the Thames, so that hundreds were in sight at a time*.

The voice of these Bats is a sharp stridulous note or scream; and this is repeatedly uttered during their flight. Whenever I roused my animals from their diurnal sleep, they opened their mouths quite wide, and made this weak kind of screeching noise. Neither the Common nor the Long-eared Bats have any offensive smell, like many of the other species.

In Wales the Common Bat is called *ystlum*: in France, *chauve-souris*, or *chauve-souris commune*: in Italy, *nottola*, *notula*: in Spain, *murcielago*, *morcuelago*: in Portugal, *morugo*, *morcego*: in Germany, *flaedermuss*: in Holland, *vledermuus*: in Sweden, *laderlapp*: in Denmark, *flaggermuus*: in Poland, *nietopersz*: in Norway, *skind-vinge*: in Russia, *netopyr*, *letuczaja-misch*.

These names, however, are often applied indiscriminately to other species of Bats, as well as to the present.

* White's Works, 1. p. 27.





H. Hoyle delin.

Long Eared Bat.

Eliz. Byrne sculp.

Pub. by W. Dorem & J. Harvey sept. 1st 1868.

Width from 7 to 11 Inches.

THE LONG-EARED BAT*.

THE Long-eared Bats are nearly as numerous as the Common species; and, in all their manners and habits of life, have a great resemblance to them. Linnæus once entertained some doubt whether, indeed, the two species were really distinct, or whether the difference between the animals was only sexual: but of three living individuals of the Long-eared Bats, which I had by me at the same time, one was a male, and the other two were females.

These were brought to me about the middle of November, 1804. As the cold weather had then scarcely begun to set in, they exhibited no symptoms whatever of approaching torpidity. In the evening, on putting them out of the box in which I had deposited them, each spread its wings, and in a moment rose up with an ease and lightness that greatly surprised me. A bird could not have got on wing with more agility. I suffered them to fly about my room for some time. They occasionally alighted on the cornice, on the frames of my pictures, and on the top of my book-case. Their flight was directed principally along the ceiling;

* *Vespertilio auritus*.—Linnæus. *L'Oreillard*.—Buffon.

For the description of this Bat, see the Synopsis, p. 5, No. 2.

and they, in no instance, approached either the candles or fire. The surface of wing in these animals, proportioned to the weight of their body, was so great, that they flew without any appearance of difficulty; nor was their flight interrupted by any of those jerks or vaccillations that are observable in the motion of Bats, when flying about for food in the open air.

As the hooked claws with which Bats catch hold of objects in alighting upon them, are situated on the members by which they have their motion, a considerable adroitness is necessary in this operation of alighting. Whenever the animals in my room were inclined to repose for a moment, and observed a place suitable for them to rest upon, they flew up gently against it, and seldom failed to catch hold with either one or both of their claws; but, if this hold was not firm, and could not easily be made so, they loosed themselves, again flew round the room, and tried other places, till they found one that perfectly suited them. The shaded part at the top of my book-case was that which the animals chiefly aimed at, and on which, after my often removing them, they always took their firmest lodgments.

When their hold was firm, they never failed to transfer their hinder feet to the place on which they at first clung with their fore ones; hanging thus with their heads downward, which seems to be the natural sleeping position of all the English Bats.

It

It was a pleasing sight to observe with what ease and neatness the animals now began to smooth their hair, and scratch themselves. In these operations, both the fore and hind legs are employed. The animals hang by one hind-leg very securely, whilst the other three legs are actively occupied; and when these have gone through their operation, the detached hind leg takes its hold, and releases the former to complete the business.

These Bats, like the rest of their tribe, walk somewhat awkwardly; but they move much faster on their legs than any one would give them credit for being able to do, incumbered as they seem to be by their wings.

With respect to the use of the inner valves, or secondary ears, of the present species, they are evidently given to the animals for the purpose of keeping out noxious insects, and preventing any other extraneous matter from entering their head during sleep, and particularly during their long winter's repose. The opening of the ear is very wide, and is situated betwixt the valve and the great outer ear. When these Bats prepare themselves for sleep, they fold down the external ears directly across the openings, and secure them in this position (close to the sides of their body) by their fore-legs, which they always rest carefully over them. By this means, the openings are so perfectly closed, that nothing injurious can possibly penetrate them. The inner valves continue
still

still erect, and to a casual observer might, during this time, be mistaken for the proper ears of the animals.

The ears of the Common Bat are formed so as to answer a similar purpose. The external valves are, indeed, too short to be folded over the opening, and held in that position by the fore-legs. These are, therefore, somewhat differently constructed. They continue erect, but the sides are so closely compressed together towards the bottom, that the scattered hairs, in their interior, either entirely prevent the intrusion of any thing injurious, or at least give sufficient notice to the animal for it to awake and avoid the injury.

There appeared to me something very singular with respect to the eyes of the Long-eared Bats. I happened to take into my hand one of these animals, whilst it seemed to be still half asleep. Its eyes were open, but I remarked that they wanted much of the lustre which they had when the animal was perfectly awake. With the feather part of my pen, the point of which was tolerably hard, I touched the hairs around the eye, to observe whether the irritation would cause the lids to close. They moved a little, but did not seem much affected by it. I proceeded, by degrees, till at length I ventured to touch the eye itself. Still they did not close; and so little was the repose of the animal disturbed, that I am persuaded nothing short of absolutely

absolutely injuring the coats of the eye would have roused it to sensation.

I put both bread and raw flesh into the box containing these Bats, yet they ate no part of them. I killed some flies and put them in, and these were soon devoured. As my room was, of course, much warmer than the retreats from which the animals had been brought to me, they did not become torpid during any part of the time I had them; but, as I was not able to procure a sufficiency of their natural food, they all died before the winter was over.

They invariably slept in the day, collected close together in one corner of the box, with their heads downward. Eight o'clock in the evening was generally the time about which they awoke, and commenced their efforts to escape. After this hour, whenever I opened the box, I had always some difficulty to prevent them from climbing up the sides and taking wing.

The winter retreat of the Long-eared Bats is usually in ruinous or uninhabited buildings. Mr. Bradley informs us, that he has occasionally found them in old walls, in considerable numbers, in a perfectly torpid state, and so closely pressed to each other, that their natural figure was scarcely discernible*.

Their voice, like that of the Common Bats, is a

* Bradley's Philosophical Account of the Works of Nature, p. 120.

kind of shrill cry, betwixt the chirping of birds, and the voice of some of the smaller quadrupeds. They have no peculiarly offensive smell.

Some of these Bats, which Mr. Carlisle had collected for the purpose of ascertaining the truth of Spallanzani's observations relative to what he denominated a sixth sense of the animals, were females, and had young ones clinging to their breasts, in the act of sucking. One of them flew about, with perfect ease, though two little ones were thus attached to her, which, together, must have weighed nearly as much as the parent. All the young were devoid of down, and of a black colour.

The observations made by this gentleman very satisfactorily prove that the sense of hearing, in some of the Bats, is exceedingly acute and delicate. He considers this to be one of the causes of the dexterity with which, even when blinded, the animals avoid obstacles that otherwise would impede their flight*.

THE NOCTULE OR GREAT BAT†.

THE first appearance of this Bat is generally about the beginning of May; and it is generally to be

* Shaw's General Zoology, i. p. 129.

† *Vespertilio noctula*.—*Linnaeus*. *La Noctule*.—*Buffon*.

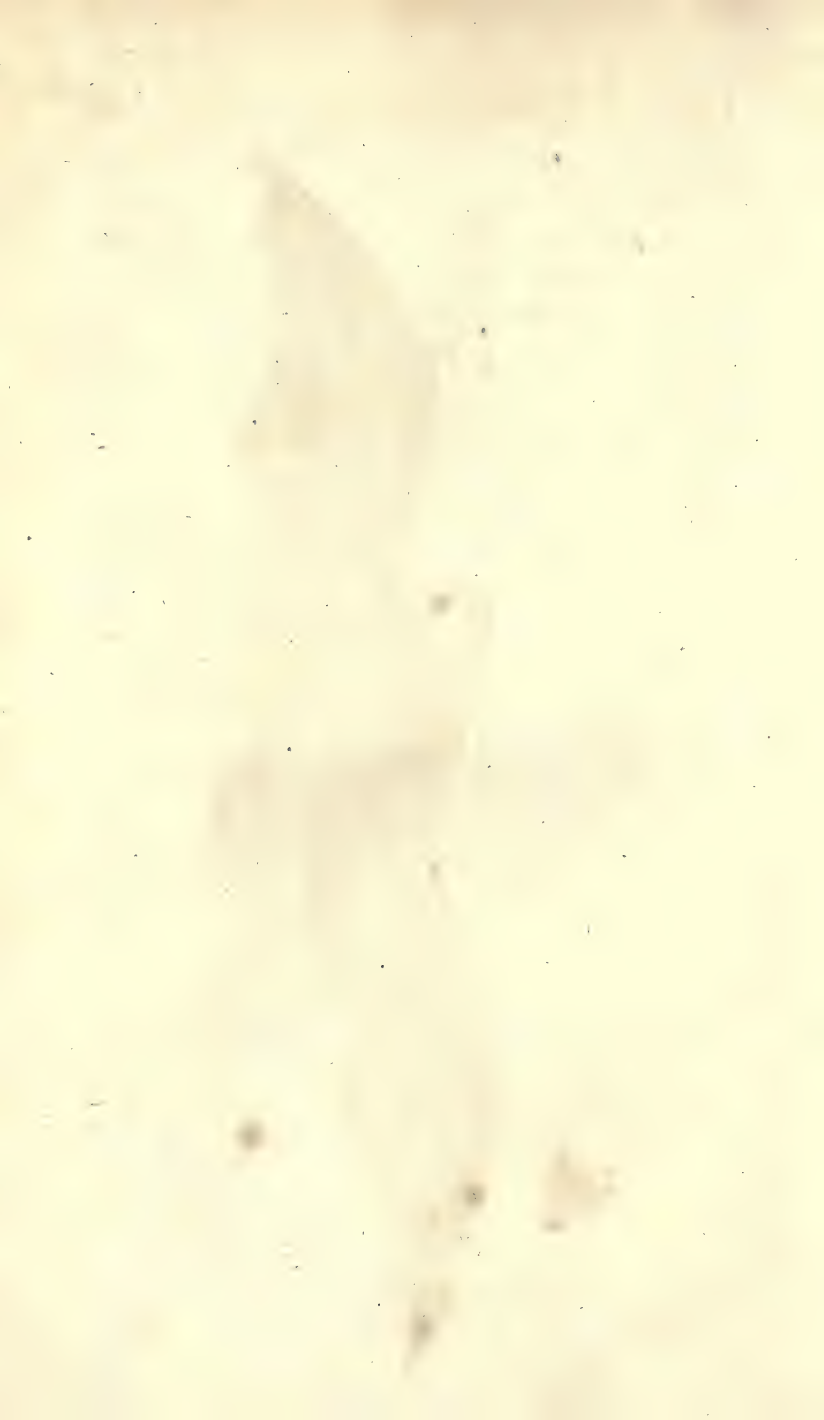
For the description of this Bat, see the Synopsis, p. 6, No. 3.



Noctule or Great Bat.

Pub. by W. Darton & J. Hoag, Sep. 1868.

Wells 14 & 15.



observed flying abroad in fine evenings, till the end of July. It does not, however, often continue later than July, and is thus a midsummer animal only. It ranges high in search of food, and is seldom to be seen hawking for insects near the ground, or immediately over the surface of water. Both in this lofty feeding, and in its early appearance and retirement, the Noctule Bat seems to be affected, with respect to the others of its tribe, much as the Swift is with the other species of Swallows; and, most probably, from the same cause, namely, the short continuance of some peculiar sorts of high-flying gnats or moths. The appearance and continuance of both the animals are, no doubt, regulated by the presence and defect of their peculiar food.

When, in the year 1769, the Rev. Mr. White, of Selborne, first remarked these Bats in his parish, and before he had procured any of them, he conjectured that, from their peculiarly high flight, and great size, they were, at that time, undescribed as British species. In 1771 he observed two individuals, which, as they were usually seen flying together, he supposed to be a male and female. One of them, a male, was caught and brought to him; and, in an evening or two afterwards, the other, which, on examination, he found to be a male also. From this circumstance, and from the very rare occurrence of the animals, at least in his neighbourhood, of Selborne, he began to suspect that they

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might not, in reality, constitute a distinct species, but that perhaps they were only the males of the common Bats; one of which, he thought, might be given for many females, as is the case in some other quadrupeds. Since his time, however, they have been satisfactorily ascertained to be distinct.

On opening the above two animals, to discover, if possible, on what they fed, Mr. White found their stomachs quite full; but the food, (insects chiefly, no doubt,) was so macerated, that the quality could not be distinguished. They each weighed an ounce and a dram. Their smell was exceedingly fetid and offensive*.

Noctule Bats are chiefly found in France and Germany; and they are much more common in all parts of the old continent, than in Great Britain or Ireland. They inhabit the gunpowder mills at Dartford in Kent; and, about thirty years ago, there were near two hundred and fifty caught, in two succeeding nights, under the eaves of some of the buildings of Queen's College, Cambridge. The specimens I examined were some, of a great number, which had been found, in a dormant state, during winter, concealed in the leaden pipes of a house at Richmond upon Thames.

* White's Works, i. p. 158.



Barbastelle Bat.

Pub. by W. Darton & J. Harvey, Sept 1st 1868.



THE BARBASTELLE BAT*.

OF the peculiar habits of life and economy of these Bats, we hitherto know but little. Even the naturalists of France and Italy, in some parts of which countries they are usually found in great numbers, have interested themselves only in describing their figure and external appearance. There is, however, reason to suppose, that, in most respects, they have a near resemblance to the common species. Yet they are easily distinguished from the latter, even on wing, in the early part of the evening, by their superior size, and their much darker colour.

Very few Barbastelle Bats have been noticed in England. The first discovery of the species, in our island, was by Colonel Montagu, in the year 1800. He had one, (supposed to be a female,) brought to him, which had been caught on wing in the village of Milton, in Devonshire; and in August, 1805, he procured a male specimen, that had been found adhering to a small tree, near Kingsbridge. About the year 1802, there was one found, amongst some Horse-shoe Bats, in the gunpowder mills at Dartford. This was sent to Mr. Sowerby of Lambeth, who kept it alive for some time; and its stuffed skin now forms an interesting article in his museum.

* *Vespertilio Barbastellus*.—Linnaeus. *La Barbastelle*.—Buffon.

For the description of this Bat, see the Synopsis, p. 7, No. 4.

THE HORSE-SHOE BAT*.

WHEN these animals sleep, they suspend themselves by their hind feet, and fold their wing membranes across their breast and abdomen. They feed on various kinds of insects, which, like other Bats, they catch during flight, in the evenings of the warmer seasons of the year. Their teeth, in proportion to the size of their body, are sometimes very large: the fangs of a specimen now in my possession measure each more than a line and half in length. But the utility of this formation is immediately accounted for, by the knowledge that they pursue *chafers*, and other coleopterous insects, with great avidity, and that they carefully shear off, with their teeth, the elytra, thorax, and legs, and eat only the body.

On examining the ears of this and the ensuing species, we are struck with a peculiarity not observable in the other kinds of English Bats. Neither of them possess any secondary or inner valves: yet, by a dilatation of the base of the ear in front, which has a notch in the edge on each side, and a fold across it, the opening of the ear is not only capable of being perfectly closed during sleep, but the dilated part of its membrane has, in such circumstances, even much the appearance of a secondary valve. There is scarcely any contrivance in the ani-

* *Vespertilio ferrum-equinum*.—Linnaeus. *La chauve-souris a fer-à-cheval*.—Buffon.

For the description of this Bat, see the Synopsis, p. 8, No. 5.



Horse Shoe Bat.



mal economy more deserving of admiration than that of the ears of the different species of Bats, whose haunts are liable to be infested with many kinds of noxious insects, which otherwise would crawl into, and injure the texture of, these delicate organs.

The Horse-shoe Bat was first observed on the continent, about the middle of the last century, by the illustrious Daubenton, who has described it with great accuracy. Dr. Latham, several years ago, discovered these animals in England, in the salt-petre houses belonging to the powder-mills at Dartford; and Col. Montagu informs us, that they inhabit, in considerable numbers, a large cavern called Kent's Hole, near Torbay, on the coast of Devonshire.

THE LESSER HORSE-SHOE BAT*.

SOME time after the Synopsis which accompanies the present volume was printed, Col. Montagu very obligingly favoured me with specimens of the two kinds of Horse-shoe Bats, both taken by him in Kent's Hole, near Torbay. Until this most accurate and intelligent

* *Vespertilio ferrum-equinum* β .—*Linnaeus* *Le Petit fer-à-cheval*.—*Buffon*.

Length scarcely $2\frac{3}{4}$ inches: extent of wings $9\frac{1}{2}$ inches. Weight from 63 to 80 grains. Nose surrounded on the top by a broad horse-shoe-shaped membrane, differing from that of the last species principally by the form of the upper, transverse, erect, and pointed part: this difference will best be explained by the accompanying outlinings, No. 1, expressing that of the last, and No. 2, that of the present species.

No. 1.



No. 2.



intelligent naturalist, in the ninth volume of the Linnean Transactions, stated his grounds for believing the small one to constitute a distinct species, it had uniformly been considered, both in England and on the continent, as only a variety of the other.

It is now many years since he first noticed these Bats in Wiltshire. Once, in particular, he was shown a great number of them which had been found in the winter, over the hollow of a baker's oven, into which they had crept through a small external fissure. About the latter end of May, 1804, he observed several of the same kind in an old building, erected for the shelter of cattle, at the verge of a wood, at Lackham, in the same county. In this dark and shaded abode, surrounded by lofty rocks, it is not, he says, unusual to see many of them adhering to the plaistered roof by their hind claws. When approached, they generally crawl a little to one side, and show signs of uneasiness by moving their heads about in various directions; but they never seem inclined to take flight till they have been repeatedly disturbed.

Teeth very small. The Horse-shoe Bat has in the upper jaw two minute distant front-teeth, which are not found in this. *Eyes* very small, black, and hidden in the fur. *Ears* large, pointed, and turned a little back at the tips: their base almost surrounds the opening; but at the outer part in each there is a notch that admits of the fore-part of the ear closing within the other, as a substitute for an inner valve, of which this species is destitute. *Teats* in the female four, two on the breast, and two on the lower part of the abdomen, close to the pubis.

Colour pale rufous brown above, but most rufous on the upper part of the head. *Col. Montagu, in Linn. Tran. vol. ix. p. 163.*

FERÆ.

OF SEALS IN GENERAL.

THE Seals are entirely marine animals, none of the species having been hitherto mentioned as inhabiting fresh waters; and they are the only animals, amongst the viviparous quadrupeds, which can with propriety be considered as amphibious. In all others the orifice, denominated by anatomists *foramen ovale*, of the heart, which permits the foetus to live in the womb without respiration, is shut from the moment they come into the world, and remains closed during their whole life. In the Seals, on the contrary, this continues open, although the mother invariably brings forth her young ones on land, and their respiration commences and operates, as in other animals, immediately after the birth. By means of this aperture in the *septum*, which allows a communication of the blood of the *vena cava*, and the *aorta*, these animals have the advantage of occasionally sus-

pending their respiration for a considerable while together. Still, however, they are obliged, at intervals, to put up their noses above the surface of the water, in order to reject the contaminated air from their lungs, and take in a fresh supply. The Seals require occasional intervals of repose, and sometimes even a long continuance on dry land. At particular periods, therefore, and especially during the seasons of producing and rearing their young, they forsake the water, and congregate, frequently in vast multitudes, on floating ice or insulated rocks.

All the Seals appear to be much more partial to cold than to warm climates: yet, some of them are observed in almost every sea. Of the three species that frequent the British coast, only one, the Common Seal, is found in any abundance; and this, principally, on the most rocky and uninhabited shores of Scotland and Ireland.

The feet of these animals bear a great external resemblance to fins. Of the fore-legs, which outwardly appear to be very short, the parts called by anatomists the arm and fore-arm, are concealed under the skin of the breast; the wrist being the first joint on the outside. The toes are inclosed in a membrane, and have each a strong nail. Of the hinder extremities, neither the thighs nor legs are visible. On each side of the body, and at no great distance from the tail, is an eminence, which is formed by the knee. From this, but under the
skin

skin, the legs extend backward, and the heels, which are the first visible part, are found on each side of the origin of the tail. The membrane of the hind-feet is generally very long; and these feet are of little or no use to the animals in walking.

Their four fin-like feet render the motions of the Seals very easy and graceful in their proper element, the water. By means of their fore-feet, the animals are able to lay hold on objects with so much firmness as to drag themselves, with considerable facility, up the shores, rocks, and even over shoals of ice, however slippery they may be. They move with much greater ease and velocity than might be expected from their general form and appearance; and oftentimes, though badly wounded, and the distance very considerable, the hunters are not able to overtake them, before they arrive at the edge of the water, and precipitate themselves out of their reach.

All the Seals have nearly the same properties and habits. They sleep principally during the day; and when they are awake and in motion, their instincts are as perfect and as active as those of most other quadrupeds. Their dispositions, generally speaking, are mild and placid; and many of the species, if taken young, may be rendered perfectly docile. Their voice is expressive, and capable of considerable modulation.

These were the animals which, according to mythologists, composed the flocks or horses of

Neptune, the syrens, and some others of the sea-deities. Most of the species have a trivial name, derived from a fancied resemblance to some land animal. In various languages they are, therefore, denominated *sea-calf*, *sea-dog*, *sea-wolf*, *sea-fox*, and *sea-lion*.

The females produce their offspring, two or three in number, generally in the winter season, on sand-banks, rocks, or small islands. They continue to feed them for twelve or fifteen days, in the place where they are brought forth; and suckle them nearly in an upright position, resting on their hind-legs. When the young ones have acquired sufficient strength to contend with the waves, the mother conducts them into the water, and teaches them to swim about, and seek for food. The attachment of Seals of the same species to each other, and particularly to their own offspring, is very pleasing. When engaged in defence of the latter, some of the species are altogether fearless of death, and will suffer themselves to be beaten to pieces, rather than allow them, with impunity, to be killed or carried away.

Seals do not attain their full growth for many years; and M. de Buffon was inclined to believe, that the duration of their lives often extended beyond a century*.

None of the animals have any external ears; the

* Buffon, par Sonnini, xxxiv. p. 16.

openings of the ears being merely orifices, denominated *auditory holes*. The crystalline humour of their eyes is almost as spherical as that of the eyes of fish; and, contrary to the form in other quadrupeds, its anterior part is the most convex*. The bodies of Seals are always thicker about the shoulders than in any other part; and from thence they taper gradually to the tail.

THE COMMON SEAL†.

SEA-CALF OR SEA-DOG.

THESE Seals are frequently observed on the sea shores of the northern and rocky parts of Scotland. About the Land's End, in Cornwall, they are, perhaps, more numerous than on any of the coasts of South Britain, unless it be those of a few parts of Wales. Sometimes individuals are found off Cumberland and Lancashire, Durham, Northumberland, and Yorkshire; but, in general, they are rarely to be observed near the counties south of these.

* Raii. Syn. Quad. p. 190.

† *Phoca vitulina*.—*Linnaeus*. *Le Phoque commun*.—*Buffon*.

For the description of this Seal, see the Synopsis, p. 10, No. 6.

The places which they chiefly inhabit are caverns, or hollow rocks, out of the reach of the tide. During the hot summer days they often leave the water to bask or sleep in the sun, upon large stones or shivers of rocks. They are said to take great pleasure in thunder-storms, sitting out of the water as long as these continue; and appearing to contemplate, with delight, the convulsion of the elements. It is, however, probable, that they leave their usual abode, on these occasions, only that they may avoid the shock of the heavy waves against the shores and upon the shallows. None of these Seals ever venture to any great distance from the land; but they are frequently observed to sport round ships and boats, that approach the places where they inhabit; and, in their proper depth of water, they are remarkably swift and agile. Borlase informs us, that, after being seen, they will often dive like a shot, and, in a trice, rise again at fifty yards' distance. In swimming, their head is not often observed above the surface of the water, unless for the purpose of respiration*. J. Stackhouse, Esq. of Pendaris, who is well acquainted with the habits of these Seals, informs me, that, in Cornwall, when persons in pursuit of them observe a Seal to thrust its head above

* In *Animal Biography*, vol. i. p. 185, on the authority of Dr. Borlase, I have asserted that, "in swimming, the Seals always keep their heads above water." Mr. Stackhouse, however, assures me that this is an error.

water, it is a common practice to halloo to the animal, till they can approach within gun-shot, since it will continue to listen to the sound, apparently wrapt in attention to it, for many seconds.

Seals feed chiefly on fish, and we are informed by Martin, that they never attempt to swallow these till they have first stripped off all the scales. He declares that he has often seen them hold the heads of the fish betwixt their teeth, whilst at the same time they tore away the scales with their fore-feet*.

That the Common Seals are very docile animals, and capable, even when taken old, of being in some measure domesticated, many proofs have, at different times, been afforded. I shall recite two instances, which were communicated to me by my accurate and highly intelligent friend, Dr. Hamilton, of Ipswich.

A few winters ago, a Seal, caught on the Welsh coast, and sent by water to London, was brought to St. Bartholomew's hospital. During the voyage, it had been fed principally upon milk; and when it arrived, it had become so familiar that it would suffer the man who brought it to play with it like a dog, and would lick his hands or face with the utmost complacency. So great, indeed, was the attachment of this animal, that, after the departure

* Martin's Western Islands, p. 62.

of its master, from the hospital, it continued for some time to emit a melancholy noise, evidently bemoaning its loss; and it died in the course of the ensuing week.

A live Seal of the present species, that had been caught below Yarmouth, was brought to Ipswich, and carried about the streets in a basket, as a show. Dr. Hamilton saw and examined it. The animal was so gentle as to suffer him, though a stranger, to stroke its head; whilst, at the same time, it turned quickly about, with open mouth, like a dog in the act of playing, rolling its fine black eyes, as if greatly delighted. It also allowed him, without any difficulty, to examine its fore-feet; and to extend, in order to view their structure, the webs of the hinder ones.

Seals are gregarious or social animals; and on rocky shores, not much frequented by mankind, they are often found collected together in immense multitudes. Their fetid and offensive odour, when thus collected, is sometimes perceptible to a great distance.

They sleep on rocks and sea-banks; and it is generally understood, that, on these occasions, they are peculiarly watchful against danger. Some respectable writers have asserted, that they post a centinel, to guard them during their hours of repose, on the first signal of alarm from which they all scramble towards the sea, and with precipitation throw themselves into the water. Mr. Pennant informs

informs us, that each of them is so watchful for himself, as seldom to repose longer than a minute, without raising up his head to listen if any attack is threatened*. Notwithstanding these accounts, there is reason to suppose that the sleep of Seals is as profound, or nearly as profound, as that of most other quadrupeds. It is during this that the hunters chiefly contrive to attack them; and when they thus come upon them unawares, they often destroy them in great numbers.

The coast of Caithness, at the northern extremity of Scotland, is perhaps better known for the pursuit of Seals than that of any other part of Great Britain. On this coast there are immense caverns opening to the sea, and running some hundreds of yards beneath the land. These, during the breeding season, are the resort of Seals, which continue here till their offspring are old enough to go to sea. The first of them is the Ord of Caithness: the last is near Thumster. Their entrance is so narrow as only to admit a boat, whilst within they are very spacious and lofty. In the month of October or November, the Seal-hunters, furnished with torches and bludgeons, enter the mouths of the caverns about midnight. After the men have landed, they make a great noise, which alarms the animals, and brings them down in vast multitudes, and great confusion, towards the mouth, to escape.

* Pennant's British Zoology, i. p. 144.

When the first crowd is past, the men are generally able to kill and secure most of the young ones which straggle behind, and which a very slight blow on the nose immediately destroys*. The animals, in their escaping from the hunters, throw backward stones and dirt, with their hind-feet; and as this is often done with great force, the common people believe it to be a mode of defence, which they adopt expressly for the purpose of covering their retreat.

When Seals, in pursuit of shoals of fish, happen at high water to enter creeks, over stakes or strong nets previously placed across the mouth, the hunters, at the ebb of the tide, are often able to kill them in considerable numbers.

Off the west side of North Uist, one of the western islands of Scotland, there is a rock called Cousmil. This is about a quarter of a mile in circumference, and is famous for an annual Seal fishery, about the end of October. The farmers of the island man their boats with a sufficient number of people for the business, and always embark with a contrary wind, to prevent their being driven out to sea, and likewise to prevent their being discovered by the acute scent of the Seals. When the crews are landed upon the island, they surround the passes, and then a signal for the general attack is given from the

* Pennant's British Zoology, i. p. 142.

boat. They beat down the animals with clubs or staves, in the manner before described. The fishermen assert, that sometimes more than three hundred Seals, young and old, have been killed in one of these rencounters*.

The modes of pursuing and destroying Seals, adopted by the inhabitants of Greenland, Finland, and other extreme northern regions, are very various. Sometimes they are shot from behind rocks, or immense masses of ice. Very frequently they are killed in the water with long harpoons. They are often watched, when coming to breathe through holes which they make in the ice; and as soon as their head is seen, they are struck by a kind of lance, or javelin. When the animals, in the spring of the year, lie on the ice, a man, clothed in a Seal's skin, and having a lance in his hand, will frequently creep along upon his belly, like a Seal, till one of them comes within his reach, when he immediately plunges his lance into the animal's body, and kills it†.

Seals are so very tenacious of life, (unless they happen to be struck on the nose, which is almost immediate death to them,) that, when severely

* Martin's Western Islands, p. 62.

† Acerbi's Travels in Lapland, &c. i. p. 188.—Egede's Description of Greenland, p. 104—106.

wounded, even when shot through the head, they will plunge into the sea and escape far out of the reach of their pursuers. When they are secured, after having been mortally wounded, they are always a great while in dying. And the relations that have been given of their existing for a considerable time, deprived even of their skin, are shocking to humanity, and reflect the greatest disgrace on those persons who could inflict so much misery on unoffending animals.

On the British shores, the females usually produce their young ones, seldom more than two in number, in the deep caverns before described*. These, at first, are covered with a whitish wool, or down. They are suckled, generally, for about fourteen days, when the dams conduct them into the water, to instruct them in swimming, and catching their proper food. Oppian has described, with tolerable accuracy, this instinctive process of the female Seals.

When they th' approaching time perceive,
They fly the deep, and watery pastures leave:
On the dry ground, far from the swelling tide,
Bring forth their young, and on the shores abide,

Till

* The inhabitants of North Uist, one of the western islands of Scotland, informed Mr. Martin, that after the Seals pair, if another male attempts to seduce the female away, the injured mate always resents the affront, by furiously attacking the aggressor.—*Martin's Western Islands*, p. 64.

Till twice six times they see the eastern gleams
Brighten the hills, and tremble on the streams.
The thirteenth morn, soon as the early dawn
Hangs out its crimson folds, or spreads its lawn,
No more the fields and leafy coverts please,
Each hugs her own, and hastes to rolling seas.

The females continue to suckle their young ones for a little while after they take them into the water; and the Cornish fishermen informed Mr. Borlase, that they had often seen two of them sucking the dam, as she stood in the sea, in an upright position*. As soon as the young ones are able to provide for themselves, the female always prevents them from sucking any longer, by furiously driving them off, which is not done without many severe blows. We are informed by Martin, that the teats of female Seals are each situated in a kind of hollow place, that they may not suffer injury by the animals' creeping along rocks and stones. It is on this account, he says, that the point of the tongue is bifid, or cloven at the end, without which shape the young ones would not be able to suck†.

The season that the Seals frequent caverns for the purpose of bringing forth their offspring, is about the latter end of the autumn; and certainly not, as M. de Buffon has asserted, in the midst of winter.

* Pennant's British Zoology, i. p. 144.

† Martin's Account of the Western Islands, p. 65.

The voice of the Common Seals is harsh and unpleasant, and has been compared to that of an angry dog. When they are young this is more shrill, and somewhat resembles the mewling of a cat. We are informed by M. de Buffon, that young ones, which are taken from their dams, mew continually, and sometimes will die of hunger sooner than receive the food that is offered to them*.

The flesh of these animals is by no means bad eating; and, in former times, it was occasionally served up at the most sumptuous and splendid tables. The inhabitants of the western islands of Scotland frequently cure it for winter's food, by means of the ashes of burnt sea-weeds. The fat is more clear and sweet than that of any of the whales. In the south of Europe the skins are sometimes used for covering trunks, for making waistcoats, and shot pouches; and, when properly dressed, for making shoes and boots. In the Hebrides, a girdle made of seal-skin is considered a never failing remedy against the sciatica; and the inhabitants of Aberdeenshire frequently wear this to remove the hooping cough. A mode has lately been invented of plucking out the long hairs from the skins, and leaving behind the fine and thick down, which is afterwards cut off and manufactured into hats.

* Buffon, par Sonnini, xxxiv. p. 74.

This Seal is called, in the Orknies, *selchy*: in Wales, *moelrhon*: in France, *phoque commun*, *veau marin*, *loup marin*: in Italy, *vecchio marino*: in Spain and Portugal, *lobo de mer*, *lobo marino*: in Germany, *robbe*, *seehund*, *see-kalb*, *meer-wolf*, *meer-hund*: in Holland, *rob*, *zeehund*: in Sweden, *sial*, *wilkare-sial*: in Denmark, *sælhund*: in Poland, *hies morski*, *ciele morski*: in Iceland, *setyr*: in Bothnia, *alg*, the male; *lagg*, the female; *kut*, the young: in Russia, *tjulen*.

These names are, however, applied, for the most part, indiscriminately to all the species.

THE PIED SEAL*.

An individual of this species, described in Mr. Pennant's History of Quadrupeds, was caught in the estuary of the river Dee, near Chester, in the month of May, 1766. For a little while after its

* *Phoca bicolor*.—Shaw. *Le Phoque a ventre blanc*.—Buffon.

The Pied Seal was unknown to Linnæus. In the folio edition of Pennant's British Zoology, it is regarded as a variety of the Common Seal; but in the last edition of his History of Quadrupeds, it is considered, with propriety, to be a perfectly distinct species.

For the description of the Pied Seal, see the Synopsis, p. 12. No. 7.

capture, its skin was naked, like that of a porpesse ; and only the head, and a small part beneath each leg, had any hair upon them ; but before the animal died, the hair began to grow on the other parts of its body.

A pied Seal, mentioned by M. de Buffon, was caught in the Gulf of Venice, on the small island of Guarnero, near the coast of Dalmatia, in the year 1777. It had been often chased without success ; and at last had nearly escaped, by breaking through the fishermen's nets. According to the report of the oldest of the fishermen, the animal had been known for more than fifty years. Its teeth were yellow, and much worn ; and its whiskers were of great length, white, and the hairs very rough.

This Seal was examined by M. de Buffon, in December, 1778, fourteen months after it had been caught. Notwithstanding its great age, it had been rendered exceedingly docile ; and it exhibited no ferocity of disposition whatever. It was attentive to the voice of its owner, and, on all occasions, obeyed his commands with great readiness. It would bend itself, roll round, turn on its back, give the man one of its paws or fins, or elevate the upper parts of its body out of the water of the tub in which it was kept, according to his orders. It answered to his call or signs, by its voice, which was hoarse, and seemed to proceed from the bottom of its throat, and had some resemblance to the hoarse bellowing of a bull. On attentively watching the
animal,

animal, it appeared that this sound (though less harsh) was produced on inspiring as well as on expiring air. It would answer its master, when it heard his voice, though he were at some distance, and out of sight. Whenever this was the case, it seemed to search for him with its eyes; and as soon as it again perceived him, though only after a few moments' absence, it never failed to exhibit proof of its joy, by a kind of hoarse murmuring noise. Till the animal was rendered tolerably docile, its owner said, that it invariably attempted to bite, with violence, any person who in the slightest degree offended it.

For about eight days, at a certain season of the year, this Seal, which was a male, changed its usually mild disposition to a singular degree of ferociousness. During this time it knew no one, and even its master's voice had no influence over its actions. One day, it seized him by the sleeve of his coat, and could not be induced to loose its hold, till its jaws were forcibly wrenched open by means of an iron instrument. Another time it laid hold of the head of a tolerably large dog, which it crushed to pieces with its teeth. In short, it exercised its fury upon every living object that ventured to come within its reach. It bellowed; and always, during these days, seemed in great agitation. Sometimes it would continue to bellow for many hours successively.

This animal usually slept in the day time; and

was frequently heard to snore at a very considerable distance. Its repose was so sound, that its master could easily approach without awaking it; and it often happened that he had a difficulty in rousing it, unless, at the same time, he put a fish of some kind to its nose. In this case, however, the animal soon recovered its wonted vivacity. If the fish was withdrawn to a little distance, it would raise its head, and the anterior part of its body; and, standing tiptoe, on its fore-feet, would endeavour to reach it. This was the only kind of food that it could be induced to eat; and of carp and eels, (the fish it was usually fed with,) it was most fond of the former. Care was always taken to roll them in salt before they were offered; and about thirty pounds weight of these fish, raw, and thus covered with salt, were necessary for its daily subsistence. All the eels were swallowed whole, as well as a few of the carp that were first presented. But when the animal began to be satiated, it gutted the others before it ate them. For this purpose it seized them by the head, which it crushed between its teeth; then, with singular address, it ripped open the belly, emptied it of its contents, and, in conclusion, swallowed the remainder of the bodies whole.

Its owner informed M. de Buffon that he had, occasionally, kept it for many days, and once for even more than a month, out of water; but that care was taken to wash it every evening with clean water,

water, and to give it salt and water to drink. When it had at any time been long out of water, its blood became overheated; and the whites of the eyes, particularly towards their angles, always appeared much inflamed.

This Seal respired only after intervals of considerable duration. In these intervals, the nostrils were perfectly closed, and appeared like two large, longitudinal marks at the extremity of the muzzle. The animal never opened them, except to reject the air from its lungs, and to take in a fresh supply. They were often observed to continue thus closed for the space of a couple of minutes together. A kind of whitish mucus, of very disagreeable odour, flowed almost continually from the nostrils.

This animal died in the month of August, 1779.

On dissection, after its death, the *foramen ovale*, contrary to what is usually observed in the animals of the present tribe, was found to be closed by a transparent membrane, disposed in the form of a semi-lunar pouch. M. de Buffon endeavours to explain the circumstance, by remarking that, in this and other individuals, which have been kept for the purpose of exhibition, the foramen ovale may have closed, in consequence of the change of their element and habits. The stomach was peculiarly strong and muscular; and the liver was composed of five lobes*.

* Buffon, par Sonnini, xxxiv. p. 54.

THE GREAT SEAL*.

IN those parts of the Northern Atlantic where the Great Seals mostly abound, they are often to be seen, collected in considerable numbers, upon huge masses of detached and floating ice. They are exceedingly timid animals; and are much sought after by the Greenlanders, who kill them with harpoons and lances, chiefly for the sake of their fat, which they eat, and consider as of peculiarly delicious flavour. The flesh, the blood, the intestines, and tendons, like those of the Common Seal, have all their uses. The skins of the old Seals are cut into thongs, and applied to various purposes; and these people stuff their beds with the hair of the young ones.

When the animals become large and fat, they lose a great portion of their original activity, and swim very slowly and heavily. They feed on various kinds of fish, such as the holibut, cod, haddock, and others which are found in shoals in the northern seas.

* *Phoca barbata*.—Linnaeus. *Le grand Phoque*.—Buffon.

For the description of the Great Seal, see the Synopsis, p. 13, No. 8.

The females, according to Fabricius, produce each only one young one at a birth, and this generally about the month of March, upon the masses of ice which float about in the open sea*. According to the account of Linnæus, (who, however, it must be observed, had by no means the same opportunity of ascertaining the fact as Fabricius, from his long residence in Greenland, had,) the females generally produce two young ones each, about the months of November or December†.

The Great Seal which was described by Dr. Parsons in the Philosophical Transactions, was exhibited at Charing Cross, in February, 1742—3. The claws on its fore-feet were very large and broad, somewhat resembling, in appearance, those of a mole. The toes were connected by a web, or membrane. The membranes of the hinder feet were much the longest. This Seal, though so young as to have scarcely any teeth, was upwards of seven feet in length. It was a female, and had four small holes, placed in the angles of a square, round the navel, which were evidently the marks of four small teats. It died very shortly after it was exhibited.

On dissection, the spleen was found to be two feet in length, four inches broad, and exceedingly

* Fauna Groenlandica, p. 16.

† Syst. Nat. Gmel. i. p. 65.

thin. The liver was composed of six lobes, each of which was long and thin, like the spleen. The gall-bladder was very small. The heart was long, and of a soft texture, having a large *foramen ovale*; and the fleshy parts were very considerable. Dr. Parsons says, that the interior conformation greatly resembled that of a Cow, and differed as greatly from that of other Seals, (two of which he had before dissected,) as the structure of a Cow does from that of a Horse. One stomach, as he informs us, was filled with fish; and in another, communicating with it, there were found about four pounds weight of small angular pieces of flint, which the animal appeared to have swallowed for the purpose of grinding its food. Besides these, there were two other bags, which contained a whitish fluid matter. He regarded this Seal as having four stomachs, and as being a ruminating animal*.

It is remarked by M. de Buffon, that although the above writer might be a skilful physician, yet in the present case his sole testimony is by no means sufficient to persuade naturalists that the Great Seal is a ruminating animal. The Pied Seal, which M. de Buffon dissected, had its stomach divided into four bags, or appendices: but he says that

* Parsons, in *Phil. Tran.* ix. p. 74.—Letter to M. de Buffon, dated London, May 10th, 1765, inserted in Sonnini's edition of Buffon, xxxiv. p. 49.

these could, in no respect, be compared to the four stomachs of the ruminants. Besides, these Seals live on fish; and it is in the highest degree improbable that any creatures, which subsist on animal food, should chew their cud.

Great Seals are not uncommon on the coasts of Scotland, and particularly about the rock of Hiskyr, one of the Western Islands. We are informed by Dr. Heysham, that they have sometimes been driven, by tempests, upon the sea shores of Cumberland.

It is generally supposed that these are the same animals which, in Iceland, have the name of *gramselt*; in Greenland, of *urksuk*, and *takka-mugak*; and in Russia, of *lachtak*.

OF THE DOG TRIBE IN GENERAL.

IN their native forests, or wilds, the animals which constitute the different species of the present tribe, usually associate in immense packs. These are often so powerful, as to make war with, and overcome, many beasts of prey, which, individually, are much more strong and ferocious than themselves. Their rapacity exceeds all bounds; and their depredations have, in some instances, proved an almost irreparable injury to the inhabitants of the countries where they dwell. Wretchedness often follows the track of these invaders. Flocks and herds have been swept before them; and from the attacks of some of stronger and more voracious species, even mankind themselves have not, in all cases, been able to escape.

Happily for us, the Fox is at present the only predacious animal of the tribe that infests the British dominions; and its attacks, and the mischief it commits, are confined, almost exclusively, to poultry, to game, and some of the smaller kinds of quadrupeds.

Wolves were once inhabitants both of Britain and Ireland; and, in the early periods, were in such multitudes in Yorkshire, that in the reign of Athelstan,

stan, says one of the old historians, a retreat was built at Flixton, in that county, *to defend passengers from the wolves, that they should not be devoured by them.* About the latter end of the tenth century, a tribute was imposed upon the Welsh princes, of three hundred wolves' heads, to be annually delivered, till the whole race should be destroyed. After a few years the tribute was remitted, under a declaration, on the part of the princes, that the breed was extinct. The numbers, had, indeed, been greatly diminished; but some of the animals were left; for, in the reign of Edward the First, they had again increased to such numbers, that a royal mandate was issued to a person of the name of Corbet, to superintend, and assist in, the destruction of Wolves, in the several counties of Gloucester, Worcester, Hereford, Salop, and Stafford. In Derbyshire, we are informed that certain persons held their lands by the duty of hunting, and taking the Wolves which infested that part of the country. The last Wolf that has been heard of in Scotland, was killed about the year 1680; and the date of the extinction of these animals in Ireland is 1710, the latest presentment for killing Wolves having been made in the county of Cork about that year.

The habitations of all this tribe of animals are burrows, or dens, which they scratch in the ground, or which they find ready formed in the clefts of rocks, or the deep recesses of forests. In these
they

they sleep, for the most part, during the day, issuing at the close of evening to prowl about for plunder. They are, in general, extremely nauseous in their feeding, preferring bodies which they happen to find exposed, or which they are able to unearth, even in the most putrid state, to fresh and recently killed food. By these disgusting manners, however, in hot climates, they are greatly instrumental to the health of mankind. They thus prevent the air from being impregnated with noxious effluvia, arising from multitudes of bodies that would otherwise be left on the earth to corrupt, and to spread around them diseases and death.

The females of the most fertile species produce from six to ten young ones at a litter. These are all blind, and in other respects are not perfectly formed, at their birth. Most of the animals attain their full size, and arrive at maturity, in about two years; and the general duration of their lives seems to be from fourteen to twenty years.

THE COMMON DOG *.

THE Dog, in a wild state, is a savage and ferocious beast, allied, in a great measure, both in temperament and disposition, to the Wolf. Wild Dogs are found, in great troops, in various parts of Africa. These are described as having red hair, and slender bodies, with turned-up tails, like greyhounds. They, however, sometimes vary in colour, have upright ears, and are of the general size of a large fox-hound.

The disposition of this animal, where it has been taken into the protection of mankind, domesticated, and instructed, has undergone a radical change; and whilst all its courage and its sagacity are left, its ferocity has been softened down to obedience. For an animal, destitute of the faculties of reasoning and reflection, we are astonished at the quickness of his perception, and sensibility. Without excepting even the Elephant, the Dog seems the most tractable and docile of all the brute creation. His gentleness and fidelity have rendered him, in many countries, not merely a useful, but a necessary companion

* *Canis familiaris*.—Linnaeus. *Le Chien*.—Buffon.

For the description of the Dog, see the Synopsis, p. 14, No. 9.

of man. To the orders of his master he yields a ready and implicit obedience. He acts upon these orders with alacrity ; and, by his vigilance and courage, frequently secures him from the attacks of his enemies. He guards, both by day and night, his property ; and will often risk his life in its defence. He is seldom inclined to injure any person, unless previously irritated or assaulted ; and is almost the only animal which forbears to resent bad treatment from his owner. The Dog, under such usage, does not even seek to desert his master ; but, in spite of the injury, will still continue to follow and defend him. If he has committed a fault, and finds that it is discovered, he crouches at his master's feet, as if to implore his clemency ; but if he be not fortunate enough to obtain mercy, he submits to the chastisement, and, the moment it is over, will lick the hand that punished him. On the least encouragement, he recovers his accustomed gaiety, runs round, and affectionately fawns upon his master. On all occasions he is attentive to his voice ; and he knows, intimately, that of every person from whom he is accustomed to receive favours or attention. "To strangers," says M. de Buffon, "he is totally indifferent ; but to beggars, whom he immediately knows by their dress, their voice, and gestures, he is a decided enemy, and at all times, if possible, prevents their approach. When, during the night, he becomes the guard of the house, he assumes a more than usual degree of boldness, and is sometimes

times even ferocious. He watches, goes his rounds, scents strangers at a distance, and if they stop, or attempt to break into the house, he flies with fury to oppose their entrance; and by continued barking, and other efforts of passion, he gives the alarm, and thus rouses the family to avert the danger. He is as furious against thieves as he is against rapacious animals. He attacks, wounds, and forces from them whatever plunder they are endeavouring to take away. But, contented with his victory, he will lie down upon the spoil, nor even touch it to satisfy his appetite: thus affording, in the same act, a pleasing example of courage, temperance, and fidelity*."

The Dog may be trained to perform various entertaining feats. He may be taught to sit upright; to walk and dance on his hind legs, even on a rope; to tumble over his head, or beat a drum. He may even, by education, be made to go many miles in search of things that have been left behind, forgotten, or lost. He may be harnessed and yoked, like a horse, to assist in drawing along heavy burthens.

Such is his *sagacity*, that we are informed of a dumb person in Mantua, who had so well instructed his dog, that on certain signs he would run out of

* Buffon, par Sonnini, xxiii. p. 156.

the room, and return with any particular servant that his master wanted*.

And, with this sagacity, so great is also his *fidelity*, that he may be trained to go to market with money, to repair to a known shop, and even to carry home provisions with safety. A Dog belonging to a man, named Porson, of Bow, had been long in the habit of carrying half-a-guinea, every week, from thence to Bethnal-Green. The circumstance was carelessly mentioned at a public-house; and a person present determined to rob the Dog. The attempt was made, but the fellow had occasion to repent of his rashness; for he was so dreadfully bitten in the hand, that it was thought he would lose some of his fingers. A neighbour interfered, took off the Dog, and enabled him to deliver his charge in safety.

But of all the educational attainments by which the Dog has been distinguished, that of learning to speak seems the most extraordinary. The French academicians mention a Dog in Germany, which was able to speak several words, and could call, in an intelligible manner, for tea, coffee, chocolate, and other things. The account of this Dog was written by no less a person than the celebrated Leibnitz, who communicated it to the Royal Academy of France†. And if accounts from Sweden

* Ruysch, ii. p. 124.

† Shaw's Gen. Zool. i. p. 289.

may be credited, there was a little Dog, some years ago, exhibited at Stockholm, which had been taught to speak many words, and to utter even complete sentences, both in the French and Swedish languages*.

Although Dogs are naturally lively, active, and vigilant animals; yet, when pampered and overfed, as we oftentimes see them, they become heavy and indolent. They pass the principal part of their lives in eating and sleeping. The latter, indeed, is almost continual, and is often accompanied by involuntary motions in the limbs, and a kind of whining noise, the apparent effects of dreaming.

These animals are all carnivorous; and the powers of their stomach are very remarkable. Bones are softened and digested so readily, that the teeth have but to break them into such pieces as can pass the gullet. The gastric juices have all the work of this digestion, to which trituration does not in the least contribute.

Generally speaking, Dogs are extremely voracious animals, and will devour almost any kind of food; but they have an insuperable aversion to many species of birds. By a singular depravity of taste, they generally prefer flesh that is, in part, corrupted, to perfectly fresh food. It is by no

* For various anecdotes of the sagacity of Dogs, see *Animal Biography*, third Edit. i. p. 200—232.

means an unusual thing to see dogs that are delicately taken care of, leave the food provided for them, and run, with avidity, to devour carrion; and they will sometimes roll, with great apparent delight, on the corrupted fragments.

They seldom eat of raw vegetables, except medicinally. When they are unwell, they bite off, and swallow, the blades of several kinds of grass. These are supposed to be of use in exciting them to vomit. M. Sonnini says, that he has seen a Bastard pug Dog, (*Roquet*,) which every day swallowed a quantity of snuff. As soon as a snuff-box was opened, it was always exceedingly troublesome till some one put a pinch into its mouth*.

Most of the Dogs have a nicety of *scent*, unusual in other animals. This is particularly the case in all kinds of sporting Dogs, except the Greyhound; and by this they are not merely enabled to hunt their prey, but they can follow the track of their master, when not in sight, to surprising distances. By this faculty also it is, that, when any thing is thrown for a Dog to fetch, he will always make sure of it, though it may not have been previously shown to him. A little Scotch Terrier, belonging to the late Captain John Campbell, of the Royal Horse Artillery, (as I have repeatedly witnessed,) after hearing a stone thrown out of a window, in

* Addition à l' Article du Chien, xxiii. p. 346.

a perfectly dark night, would leave the room by the door, and, going round the corner of the house to the spot, would never fail to return with the same stone in his mouth.

To account for this peculiar nicety of scent, it is to be remarked, that, in the Dog, the cavity of the *ethmoid*, or spungy bone, at the top of the nose, betwixt the nose and the brain, has a larger surface than that of most other quadrupeds. The *olfactory nerves* pierce this bone, and are extended over it; and their extent of surface is, consequently, greater than in other animals.

The females have commonly two births in the year; and they produce, at each litter, from four to twelve young ones. These come into the world perfectly blind, their eye-lids not only being closed together, but adhering by a membrane, which breaks away as soon as the muscles of the upper eye-lid acquire sufficient strength to raise it, and overcome this obstacle. In most Dogs, the eyes are opened about the tenth or twelfth day. When first produced, the bones of the skull are not finished; the body is very thick, in proportion to its length; and the whole form is incomplete. But, in the course of two months, the animals begin to attain their shape and strength, and learn to use all their senses. Their growth, during this period, is very rapid.

In about two years, Dogs arrive at a state of maturity; and the usual term of their lives is from ten to fourteen years. Some Dogs, have, however,

attained the great age of twenty years. When Dogs become old, they carry all the marks of age. They are weak; their hair loses its bright and lively appearance; their teeth and eyes fail them; and, at last, from weakness and disease, they often become unpleasant inmates to our dwellings.

The Dog will breed both with the Wolf and the Fox. The offspring from this connexion are not barren; but will likewise breed, not only with other Wolves, Foxes, and Dogs, but even amongst themselves. This is a fact that M. de Buffon was at great trouble and expence to ascertain; and the numerous instances cited in the supplementary volumes of his works, have done it very satisfactorily.

The inhabitants of many countries, and particularly of those of several parts of Africa and Asia, are partial to the flesh of the Dog; and fatten these animals, sometimes in great numbers, for food. In Europe, however, the skin seems to be accounted the only useful part of its body. This is made into shoes, gloves, and other articles of dress.

Dogs are subject to three very severe diseases; the mange, distemper, and madness. Against the former, cleanliness, air, and exercise, are considered to be good preservatives.

The distemper has not been known in this country more than forty years; but it is now become one of the most fatal disorders that any animals can be subject to. Dogs are usually attacked by it whilst young, between the ages of six and twelve months; and

and very few of the species escape it altogether. In its worst form it is so severe, as to be sometimes mistaken for canine madness ; fortunately, however, for the happiness of mankind, it is very different from that, in every essential particular.

To *hydrophobia*, or madness, all Dogs are liable ; and from this dreadful malady, many melancholy events proceed every year. Opinions differ as to the cause of hydrophobia. It is usually asserted, (though apparently without foundation,) to be most frequent after long dry and hot seasons ; and some experienced men say, that such Dogs as live on putrid carrion, without plenty of fresh water, are more liable to it than others.

The symptoms are stated to be these. The Dog at first looks dull, shows an aversion to his food, and to company. He does not bark as usual, but utters, occasionally, a most dismal and plaintive howl, which no person, who has once heard, can ever forget. His ears and tail drop more than usual. He lolls out his tongue, froths at the mouth, and his eyes seem heavy and watery. If not confined, he escapes, and runs panting along, with a dejected air, and endeavours to bite any one he meets. After the first symptoms of madness, there are two or three days, during which the Dog has sufficient sense to distinguish and acknowledge his master. But if he is loose, he will, in general, even at this time, bite whatever comes in his way. He will sometimes, during this stage of the disease, leave

his home for several hours, spread his disorder by biting men and animals, and again return. When in the height of his disorder, it is peculiarly dangerous to strike at, or provoke, a mad Dog; for he has then no fear of any thing, and will generally return the attack. If a mad Dog escapes being killed, he seldom runs more than two or three days, when he dies, exhausted by heat, hunger, and disease. In confinement, he does not often survive the fifth day, from the first exhibition of the symptoms. In the last stage of the disease, his appearance is altogether much altered. His eyes are sunk. His tongue is black and dry. He makes horrid howlings, and seems much disturbed. The concluding scene, it is said, is dreadful to witness.

The usual period for the symptoms to be remarked, after a Dog has been bitten, is betwixt seven and eight weeks; but, in a few instances, these have been known to appear in so short a time as ten or twelve days.

It is a generally received opinion, that mad Dogs, even in the earliest stages of their disease, will not take the water. Two well-authenticated instances of madness, however, occurred in the year 1791, in which the Dogs, on being closely pursued, swam over a navigable river*. Although the animals, at the height of their disorder, usually

* These are mentioned by Mr. Daniel.

refuse both food and drink; yet we are assured, that they do not show any abhorrence or dread of water, but will sometimes lap it eagerly to the last. This, however, is very remarkable, that although they *lap* the water for a long time together, with great avidity, and seem not to experience any uneasiness from it; yet they do not *swallow a single drop*: and, however long they continue lapping it, no diminution in quantity can be perceived*.

The only effectual remedy against this dreadful malady, seems to consist in cutting out the wounded part, as soon as possible after the bite is inflicted; or in cauterizing it with a hot iron. There have been various specifics made public for the cure of hydrophobia; and none have attained so much celebrity as that denominated the Ormskirk Medicine. The efficacy of the whole of these is, however, so much to be doubted, that they ought, by no means, to be trusted in cases where either of the above remedies can be applied.

When any person is bitten by a Dog reputed to be mad, the animal ought, by no means, to be destroyed, as is too often the case. If the Dog be fastened up, and no remedy used, a few days will ascertain whether he is really mad or not. Many persons have lived for years, in the most distressing

* Remark of Mr. Meynell, quoted in Daniel's Rural Sports, 8vo. edit. i. p. 159.

anxiety of mind, from the want of this necessary and easy precaution.

In Wales, the male of this species is called *ci*; and the female, *gast*: in France, *chien* and *chienne*: in Italy they are each called *cane*: in Spain, *perro*: in Portugal, *cane*, *cani*: in Germany, *hund*: in Holland, *hond*: in Sweden and Denmark, *hund*: in Poland, *psi*: in Russia, *pes*, *sobaka*: in Iceland, *lubba*.

The following are the principal varieties of the Dog, which, at this time, are recognised as natives of the British islands.

- | | |
|--------------------|----------------------|
| 1. Shepherd's Dog. | 8. Irish Greyhound. |
| 2. Water Dog. | 9. Common Greyhound. |
| 3. Spaniel. | 10. Mastiff. |
| 4. Setter. | 11. Bull Dog. |
| 5. Pointer. | 12. Terrier. |
| 6. Hound. | 13. Lurcher. |
| 7. Bloodhound. | 14. Turnspit. |





Shepherd's Dog.

Pub. by W. Dutton & J. Murray, Street 17, 1808.

THE SHEPHERD'S DOG*.

Curr.

IN instinct and sagacity, the Shepherd's Dog is, perhaps, superior to all others; for whilst the rest require great care and attention to train them to labour, this animal applies himself, without any difficulty, to that to which he is usually appropriated. His usefulness alone has been the recommendation to preserve the species; since no Dog can go through a more extensive variety of duty, nor does any one perform more services to his master than this. In wide tracts of country, that are solely appropriated to the feeding of sheep and cattle, immense flocks may be seen ranging over the wilds, apparently without control. One of these Dogs is of more essential use to the Shepherd, than half a dozen boys would be; is more expeditious; and is at all times ready to obey commands. At a word from his keeper, he drives the sheep, in order and regularity, to and from their pasture; and will suffer no stranger, from another

* *Canis familiaris domesticus*.—*Linnaeus*. *Le Chien de Berger*.—*Buffon*.

See the Synopsis, p. 15. No. 9, VAR. 1.

flock,

flock, to intrude upon his. If any of the sheep attempt to stray, he springs forward in an instant to stop their course. On the side of one of the Welsh mountains, I have seen a shepherd point out to his Dog a straggling Sheep, on a height, more than a mile distant. He gave the well-known signal. The Dog went off at full speed, and soon returned, with the animal, to the flock. These Dogs drive the Sheep entirely by their voice, never lacerating them with their teeth; nor ever employing force, but for the preservation of peace and good order. When awake, they are at all times alive to their master's directions; and, in repose, they lie down by his wallet, and defend it from plunder. If the shepherd be about to absent himself from the flock, he depends on his Dog to keep the animals together; and if, afterwards, he is heard to give the command, this faithful servant conducts them to him, with promptitude, however great the distance. In countries infested by Wolves, he protects them from danger. His voice generally alarms and drives off the enemy, and collects the flock into a body much better than the voice of the shepherd.

Various instances have been related of the *fidelity* of this Dog to his master. I shall insert but one.

In the very severe winter of 1794, as the son of a Mr. Bousted was feeding his father's Sheep, on an extensive common, near Penrith in Cumberland,

land, he had the misfortune to fall down and break his leg. Being then three miles from home, out of the hearing of every one, and the evening approaching, he was, for some time, at a loss in what manner to act. At last, he took out one of his gloves, folded it in his handkerchief, tied this about the Dog's neck, and ordered him home. The animal immediately set off; and, arriving at the house, scratched at the door for admittance. The parents of the youth were much alarmed; and, concluding that some accident had happened, the father, with some of his friends, instantly set out in search of him. The Dog needed no invitation to lead the road; but, of his own accord, returned with the anxious parent to the spot where his son lay: and the young man, thus rescued from otherwise inevitable destruction, by the fidelity of his Dog, was taken home, and soon afterwards recovered*.

* Gentleman's Magazine, for February, 1795.

THE WATER DOG.

Great Water Dog. Lesser Water Dog. Finder.

THE Water Dog is distinguished from all others by his rough and curly hair. He is believed to have been originally introduced into this country from Spain. These Dogs are remarkably fond of swimming about in the water, which they do with singular activity and ease; and they are useful to sportsmen, in fetching from thence such birds as are shot and fall into it. There are two kinds, but they differ from each other only in size.

A pleasing instance of *attachment*, in a small Water Dog belonging to the farrier of the C. troop of Horse Artillery, has been related to me by a friend, who had a personal knowledge of the fact. When this troop was at Canterbury, a few years ago, an officer of the fifty-second regiment, much pleased with the appearance of the animal, purchased her. In the course of a little while, she was sent, and every possible attention was paid to her

* *Canis familiaris aquaticus*.—*Linnæus*. *Le Barbet*.—*Buffon*.

See the Synopsis, p. 16, No. 9, VAR. 2.



Water Dog.

Howitt.



in her new habitation. As soon as her master had left her, she began to whine, and appeared very unhappy. Some food was put before her; but she refused to eat. She was tried with every delicacy that it was thought might tempt her, but to no purpose; and for three days she persisted in rejecting every kind of nourishment. The officer, at last, sent for the farrier to relate the circumstance, and ask his advice. As soon as he opened the door of the place where she was confined, the little creature, almost frantic with joy, exerted her greatest effort to escape from her chain. He offered her some food, which she swallowed with the utmost voracity; but he had no other alternative to save the life of the faithful animal, than by refunding the money which he had received, (which he did not hesitate a moment to do,) and again taking her into his own possession.

The hair of the above animal is so soft and fine in its texture, that her owner cuts it off twice in the year; and each fleece is found sufficient to be manufactured into two hats. These are generally considered to be worth about twelve shillings each.

THE SPANIEL*.

THIS Dog has its name of *Hispaniolus*, or Spaniel, from Spain, the country from which we originally derived the breed; but, like the last variety, it is now so completely naturalized in Great Britain, that we may properly consider it as a British animal. Its chief use is in the sports of the field; and when hawking was a fashionable recreation in this country, it was the kind of Dog always taken out to spring the game.

Spaniels, in almost all ages, have been noted for *fidelity*, and attachment to their masters; and the instances that have been recorded, in proof of this, are innumerable. I shall select a very remarkable one.

A few days before the overthrow of Robespierre, a revolutionary tribunal had condemned Mons. R——, an ancient magistrate, and a most estimable man, on the pretence that he had been guilty of conspiracy. Mons. R—— had a Spaniel, at that time about twelve years old, which had been

* *Canis familiaris extrarius*.—*Linnæus*. L' *Epagneul*.—*Buffon*.

See the Synopsis, p. 16, No. 9, VAR. 3.

Spaniel.





brought up by him, and had scarcely ever quitted his side. He was thrown into prison. His faithful Dog was with him when he was seized, but was not suffered to accompany him into confinement. The Dog took refuge with a neighbour of his master; and every day, at the same hour, returned to the door of the prison. Such unwearied fidelity at length excited the compassion even of the porter, and the Dog was allowed to enter. The joy of the master and his Dog was mutual. It was found difficult again to separate them; and the jailor, fearful (if the Dog should be discovered there) that his governors might consider him as favouring a prisoner, was compelled to *carry* him out. The animal returned regularly every evening, and was as regularly admitted. On the day appointed for receiving sentence, the Dog, in spite of the guards, penetrated into the hall, and crouched betwixt his master's legs. At the execution he was also present, and was with difficulty forced from the body. For two nights and a day he remained on the grave. The friend of his master, who had before afforded him an asylum, unhappy at not seeing the Dog as usual, and guessing to what place he had retired, stole forth by night, and finding him at the grave, caressed and brought him back. He tried every means that kindness could devise to induce him to eat; but in a short time the Dog escaped, and regained his favourite place. For three months he came every morning to his pro-

tector, merely to receive his food; and again immediately returned to the grave. At the end of this time he languished, refused to take any nourishment, and died.

A very pleasing instance of the *sagacity* of a Spaniel occurred to Cowper the poet. As this gentleman was walking along the bank of the Ouse, accompanied by his Spaniel, he observed in the river some water-lilies in bloom. He was desirous of seizing one of the flowers; and, by means of his walking-stick, made several attempts, but in vain, to steer one of them to his hand. Finding that all his efforts would be to no purpose, he left the flowers and went on. Having finished his ramble, he returned homeward by the same place. The Dog, without any instruction, plunged into the water, cropped the identical flower that Cowper had been so long in vain attempting to seize, brought it away in his mouth, and dropped it at his master's feet*.

Of the *instinct* of Dogs, in returning home without any guide, from distant places, there have been numerous and surprising recitals. None, however, are more deserving of attention than the following.

The late Colonel Hardy was sent for, express, to

* See the "Dog and the Water Lily," in the second volume of Cowper's Poems.

at the Year 1772 or 1773 M^r W^m Ward of Fleet St^t
native of Berwick upon Tweed went
Thounds there & during his stay took man-
age of a Spaniel kept by the Family At his
London he was much pressed to take the Dog
with him, but travelling by the Coach he con-
sidered the trouble & danger of bringing the Dog sa-
fe. The Dog was afterwards sent to him by a Ber-
wick pack & delivered safe in Fleet St^t M^r W^m felt
that his present was so fearfull of losing his
Dog never he went from home, he had the Dog
with him till his return, One evening going to the
House he secured the Dog in the Counting House
with a charge to his Servants to take care not
to let him out But inadvertently the door was open-
ed & the Dog sprung into the Street & never returned
When informed was much distressed &
the following evening wrote his friends of his loss,
to his great surprise he received an answer
that the Dog had arrived at Berwick
as his letter.

With M^r W^m Twiss well acquainted &
reason to doubt his veracity — W B —



N. 9. var. 1.



Setters.

Bath; and he took along with him, in his chaise, a favourite Spaniel bitch, which never quitted him till he arrived there. After remaining four days, he left the Spaniel at Bath, and returned, with equal expedition, to his house at Springfield in Essex. On the third day after his return, the bitch was found at Springfield, though the distance betwixt that place and Bath is 140 miles. She had to pass through London, where she had never been, before her former passage through it, and then she was shut up in the carriage*.

THE SETTER†.

Index. English Spaniel. Old English Setter.

THE Setter is a Dog very nearly allied to the Spaniel; and is, to this day, frequently distinguished by the name of *English Spaniel*.

In the field, these Dogs are often used in place of Pointers; and in countries that have plenty of

* Daniel's Rural Sports, i. p. 17.

† *Canis familiaris index*.

See the Synopsis, p. 17, No. 9, VAR. 4.

water, they are considered superior: but it is said, that they cannot so well endure either heat or thirst as Pointers. Both these kinds are very tractable, and easily trained to their duty.

For the purpose of teaching them to bring game to their masters, a stuffed Rabbet-skin is employed. This, at first, is thrown before the Dog in a room, and, as soon as he has seized it, he is pulled gently to the man who is teaching him, by means of a string fastened to his collar. After being properly encouraged for three or four times in this manner, the string is taken off, and he is tried without it. When the Dog begins to enjoy this amusement, the Rabbet's skin is suspended by a cord over a pulley, the other end of the string being held by the teacher. A pistol is fired, and the skin let drop. The Dog soon becomes fond of the sport, and will afterwards readily bring all the game that is shot.

Of the *stoutness* of the Setter, the late Mr. Elwes mentioned a very decisive proof. A Setter, of the breed for which he was famous, in following him to London, hunted all the fields adjoining the road, through a distance of *sixty miles**.

Britain has been long remarkable for producing Dogs of this sort; and, in many parts of the country, particular care is yet taken to preserve the breed in its utmost purity and perfection.

* Daniel's Rural Sports, ii. 289, and 484.





Howitt

Pointer.

Setters, when they are old, are subject to a disorder in the head, which causes an offensive running at the ears. This is brought on by age, and increased with it; and though various remedies have been tried, none, it is said, have hitherto proved effectual.

THE POINTER*.

THE Pointer is of foreign extraction, but has long been naturalized in this country. The large Pointer, or, as it is commonly termed, the *Spanish Pointer*, is a docile animal, with a large and broad head, stout limbs, and weighty body. His faculty of smelling is considered to be much more delicate than that of the *English Pointer*; but he is not able to bear the fatigues of the field so well: and the pace at which he goes is ill calculated for any parts of the country, except those in which game is abundant.

The appearance of the Pointer, whilst engaged in marking his game, is very beautiful. His head is held with the muzzle a little downward, and his eyes seem rivetted to the spot where the birds are lurk-

* *Canis familiaris avicularis*.—Linnaeus.

See the Synopsis, p. 17, No. 9, VAR. 5.

ing. One foot is usually somewhat raised from the ground, and his tail is extended in a straight line. If the birds run, he discovers it, and steals cautiously after them, keeping still the same attitude; and when they stop he is again steady. A Dog and a bitch belonging to Colonel Thornton, it is well known, were so staunch, that they kept their point during the whole time that a sketch was making of them: upwards of *an hour and a quarter*.

THE HOUND*.

German Hound. Fox-hound. Harrier. Beagle.

THE *Harrier* and the *Fox-hound* may be considered to rank under the same head. Each has its name from its peculiar employment: the former, from being used in hunting the Hare; and the latter, which is larger, more strong, and fleet, from hunting the Fox.

There are several kinds of *Harriers*, each of which is said to have its excellence, according, perhaps, to the country in which it is employed;

Canis familiaris Sagax.—Linnaeus. *Le Chien courant*.—Buffon.

See the Synopsis, p. 18, No. 9, VAR. 6.



Harrier

Harrier.



or, in some instances, according only to the whim or fancy of the owner. That denominated the *Southern Hound* is very slow, but will hold out a chase for many hours. Its cry is said to be deep and fine; and the whole pack generally keep well together, from the nearly equal speed of the Dogs. In open countries, where there is good riding, a kind is preferred that is fleet, have sharp noses, narrow ears, deep chests, with thin shoulders, and show a quarter cross of the Fox-hound. *Beagles* have their admirers. They are nimble and vigorous, pursue the Hare with impetuosity, give her no time to double, and, if the scent lies high, will easily run down two brace before dinner. They are not, however, always to be depended on; and they are said to require the constant discipline of the whip, and to be perpetually hunted, in order to make a good pack.

A perfect Harrier should be of the middle size, and should have a broad rather than a round back. His nose should be large, having wide nostrils; his chest deep and capacious; his fillets great and high; his haunches large and hams straight. The feet should be round, the soles hard and dry, and the claws large. The ears should be wide, thin, and more round than sharp: the eyes full, forehead prominent, and the upper lip thick, and deeper than the lower jaw. The following is Somerville's description of the Hound.

His wide op'ning nose
 Upward he curls, and his large sloe-black eyes
 Melt in soft blandishments, and humble joy :
 His glossy skin, or yellow-pied, or blue,
 In lights or shades by nature's pencil drawn,
 Reflects the various tints ; his ears and legs
 Fleckt here and there, in gay enamell'd pride,
 Rival the speckled pard : his rush-grown tail
 O'er his broad back bends in an ample arch ;
 On shoulders clean, upright and firm he stands ;
 His round cat-foot, straight hams, and wide-spread thighs,
 And his low-dropping chest, confess his speed,
 His strength, his wind, or on the steepy hill,
 Or far extended plain.

The *Fox-hound*, to be of perfect form, should have his legs straight, and feet round and not too large. His shoulders should lie back ; his breast be rather wide than narrow ; his chest deep, and his back broad. His neck should be thin, his head small, and his tail thick and bushy. As to size, Dogs that are of a middle stature are often as fleet and true as any ; but in the same pack, all the Dogs should be as nearly of the same size as possible. The colour, either of Fox-hounds or Harriers, is considered a matter of no further importance, than as it concerns the beauty of their appearance.

Forty couple of Fox-hounds are considered a sufficient pack to admit of hunting three times a week, (allowing twenty five couple the usual allotment for the field,) unless the country be extremely bad for laming Hounds. And even then, say the sportsmen, the number taken into the field had,

had, perhaps, better be reduced, than a greater number of Hounds be kept. The reason they allege for this is, that, when a pack is very extensive, the Hounds are seldom sufficiently hunted to be good. Twenty-five couple of Hounds are said to be, at any time, sufficient to be taken into the field. Supposing them to be steady, and nearly equal in speed, they are a match for any Fox. Too many Hounds always do more mischief than service.

The *speed* of a Fox-hound generally begins to fail after he has run for five or six seasons; though there is no saying, with certainty, what number of years a good Hound will last. A spayed bitch, called Lily, ran at the head of old Mr. Pantons' Hounds, at Newmarket, for *ten* seasons. But this is considered as a singular instance of undiminished speed.

In ascertaining the *speed* of Fox-hounds, that pack is to be considered the fleetest, which can run ten miles in the shortest time; notwithstanding the Hounds, separately, may not be so speedy as many others.

The Duke of Richmond's Hounds, in January, 1738—9, found a Fox at a quarter before eight o'clock, and killed it at ten minutes before six, after ten hours' constant running. Many gentlemen tired three horses each. Only eleven couple and a half of the Hounds were in at the death*.

* Daniel's Rural Sports, i. p. 150.

On the nineteenth of February, 1783, a Fox was unkennelled near Boroughbridge in Yorkshire, at twenty-seven minutes past nine, and, except half an hour taken up in bolting him from a Rabbet-burrow, the Hounds had a continued run till fourteen minutes past five in the evening. During this space, of nearly eight hours hard running, several horses died in the field, and many others were so much injured, as never afterwards to be perfectly recovered*.

In a match, a single Fox-hound has been known to run four miles in seven minutes and half a second.

That Hounds are not enemies, by nature, to the animals they are employed to hunt, seems evident, from a circumstance which occurred at the Duke of Richmond's, at Goodwood. In the year 1797, five young Foxes were suckled, and reared, by two Fox-hound bitches†.

A laughable instance of the power that the huntsman has over his Hounds, is said to have occurred not many years ago. A gentleman, who was somewhat too distinguished for scolding his huntsman in the field, was one day so much incensed at a reply which the fellow made, that he turned him off on the spot. The next day that the gentleman went out, the voice of the huntsman

* Daniel's Rural Sports, i. p. 157.

† Ibid. i. p. 92.





Bloodhound.

Hewitt

saluted his ear. He hallooed the Dogs round the foot of a tree in which he had quietly perched himself, and not a dog would leave the spot. What could be done? The gentleman wished to hunt: but there was no hunting without Dogs; and there was no stopping the man's mouth. He was at last compelled to make the best of a bad bargain, and take the fellow again into his service.

THE BLOODHOUND.

Sleut-hound.

THIS is a beautifully formed animal, equal in size to a very large Hound, but superior to every other kind of Dog in speed, sagacity, and strength. He is muscular, broad-breasted, and has a stern countenance. His colour is generally deep tan, or reddish brown, with a black spot over each eye. He is seldom known to bark, except in the chase.

* *Canis familiaris sanguinarius.*

See Synopsis, p. 18, No. 9, VAR. 7.

This animal is called in Scotland *Sleut-hound*, probably from the Saxon word *slot*, the impression that a Deer leaves of its foot in the mire, and *hund*, a Dog. So that, with our Scottish ancestors at least, it seems to have been employed in tracking the Deer.

The

The Bloodhound was of great use, and held in high esteem amongst our ancestors. His employment was principally to recover game that had escaped, wounded, from the hunter; or that had been killed, or stolen, out of a forest. The lost beast was traced by its blood; and the animal could with certainty discover the thief, however great the distance of his flight, or however thick and secret the forests through which he passed.

At each of the Lodges in the New Forest, Hampshire, there are at this day Bloodhounds kept, for the purpose of tracing wounded Deer. In doing this, they are often known to pass through whole herds of these animals; but their attention is never drawn off from the line of scent they are following. Nothing diverts them from the object of their pursuit.

Bloodhounds were formerly used in certain districts on the confines of England and Scotland, where the borderers, on each side, were continually ravaging the herds and flocks of their neighbours. And a tax was annually laid on the inhabitants, for the keeping and maintaining of a certain number of these animals.

In the Courier newspaper, of the eighteenth of October, 1803, I remarked the following paragraph: "The Thrapston Association for the prosecution of felons, in Northamptonshire, have provided and trained a Bloodhound, for the detection of sheep-stealers. To prove the utility of the
Hound,

Hound, the 28th ult. was appointed for the purpose of exercising it. The person to be hunted started at ten o'clock in the forenoon, in the presence of a great concourse of people; and at eleven the Hound was let loose; when, after a chase of an hour and a half, notwithstanding a very indifferent scent, the Hound discovered him, secreted in a tree, at the distance of fifteen miles."

Bloodhounds have, of late years, been employed in the island of Jamaica, for the purpose of discovering the ambuscades of the Maroons, in their projected descent upon the whites.

The Dogs are taught to act more by exciting terror than by attack; and criminals are taken by them, and brought to justice, without the slightest personal injury. Instances have occurred where, on resistance being made, they have lacerated or killed their opponent. But these, in the present age, are very few, since it is made an essential part of their training to prevent them from this. It is, however, but too true, that in South America, three centuries ago, the Spaniards committed the most horrible enormities upon the miserable Indians, by means of Dogs of this description; and the just indignation of mankind long continued to brand the Spanish nation with infamy for such atrocities.

THE IRISH GREYHOUND*.

Wolf-Dog. Leviner, or Lyemmer.

THESE Dogs are considered to be of very ancient origin in Ireland. Mr. Pennant, from their near resemblance to the Great Danish Dog of Buffon, conjectures that they may probably have been imported thither by the Danes, who long possessed that kingdom. Their original use seems to have been for the chase of Wolves, with which Ireland formerly swarmed; but as soon as these animals were extirpated, the number of the Dogs decreased; and from that period they were kept chiefly for state. Mr. Lambert informs us, in the Linnean Transactions, that the only Dogs of the breed now in Ireland, are those belonging to the Marquis of Sligo which, when he saw them, were no more than eight in number. One of them measured five feet and an inch from the extremity of the muzzle to the tip of its tail. Dr. Goldsmith saw an Irish Greyhound that was about four feet high, or as tall as a Calf of a year old.

* *Canis familiaris Hibernicus.* *Le Grand Danois.*—Buffon?

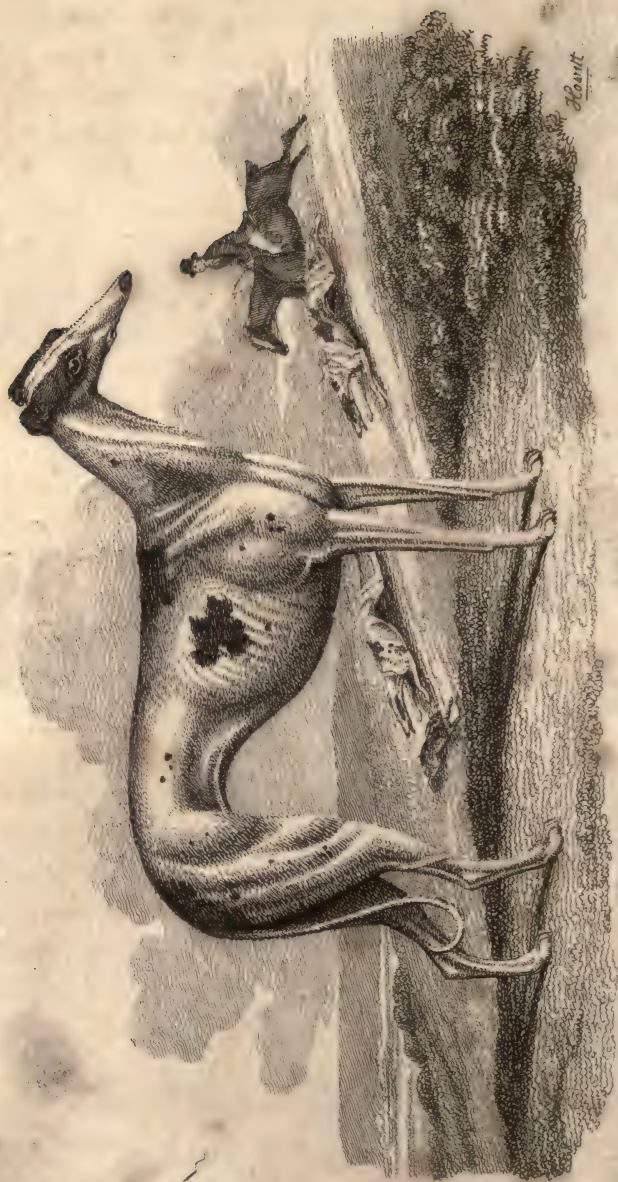
See the Synopsis, p. 19, No. 9. VAR. 8.

Irish Greyhound or Wolf Dog.









Greyhound.

The Irish Greyhound is supposed to be the largest of all the Dog kind, as well as one of the most beautiful and majestic in its appearance. Its limbs are proportionally more stout and strong; and its whole formation much heavier than that of the Common Greyhound.

These Dogs are now very rare in all parts of the world. Pennant informs us, that latterly they became scarce in Ireland, in consequence of the king of Poland having procured from thence, by his agents, as many as he was able to purchase*. M. de Buffon says, that he never saw more than one of them in France.

THE COMMON GREYHOUND†.

Highland Greyhound.

The Greyhound was formerly esteemed first in rank amongst the British Dogs. By the forest laws of King Canute, it was enacted, that no person under the degree of a gentleman should presume to keep a

* Penn. Brit. Zool. i. p. 65.

† *Canis familiaris grajus*.—Linnaeus. *Le Levrier*.—Buffon.

See the Synopsis, p. 19, No. 9, VAR. 9.

Greyhound. The ancient Welsh had a saying, that "a gentleman may be known by his hawk, his Horse, and his Greyhound." This Dog was considered as a valuable present, even amongst the highest orders of society. In a very old metrical romance, entitled *Sir Eglamore*, a princess tells the knight, that, as an especial mark of her favour, she would give him an excellent Greyhound, so swift that no Deer could escape from his pursuit.

"Syr yf you be on huntynge founde,
I shall you gyve a gude Greyhounde
That ys dunne as a doo:
For as I am a trewe gentylwoman,
There was never Deer that he at ran,
That might yscape him fro."

In ancient times, Greyhounds were used to course three kinds of animals; the Deer, the Fox, and the Hare. The two former are never coursed at present. The Dogs that were employed in coursing the Fox were necessarily strong, hard-bitten animals, that would seize any thing; weaker Dogs would soon have been spoiled by the keen gripe of the Foxes.

The variety called the *Highland Greyhound*, now become extremely scarce, is of great size, strong, deep chested, and covered with long and rough hair. This kind was much esteemed in former days, and was used by the powerful chieftains of those times, in their magnificent hunting matches.

The

The old opinions respecting a perfectly formed Greyhound, were expressed in the following couplets:

“Headed like a Snake;
Necked like a Drake;
Backed like a Beam;
Sided like a Bream;
Tailed like a Rat;
And footed like a Cat.”

With respect to *swiftness* of foot in the Greyhound, it is well ascertained, that, on flat ground, a first-rate horse would be superior to it; but, in a hilly country, a good Greyhound would have the advantage. The following incident occurred in December, 1800, which brought the speed of the Greyhound and Racehorse into competition.

A match betwixt two Horses was to have been run over the race-course at Doncaster, for a hundred guineas; but one of them having been drawn, the other, a mare, started alone, to make good the bet. After having gone the distance of about a mile, a Greyhound bitch started from the side of the course, and ran with the mare the remaining three miles, keeping nearly head to head, which produced a singular race. When they arrived at the distance-post, four to five was betted on the Greyhound; and when they came to the stand, the betting was even. The Mare won by about a head.

In February, 1800, a brace of Greyhounds, in Lincolnshire, ran a Hare to a distance, measured in a direct line from her seat to the place where killed, upwards of *four miles, in twelve minutes*. During the course, there was a great number of turns, which considerably increased the space gone over. The Hare ran herself dead before the Greyhounds touched her.

Horses have been as greatly distressed in keeping up, for their riders to see a course, as in much longer chases with Hounds. A Hare was found close to the town of Bottisham in Cambridgeshire, and twenty-two Horses started; but only one could make a gallop at the conclusion of the course. The Hare (which was within fifty paces of the cover) was dead some yards before the Greyhounds; and even these were obliged to be bled, in order to recover them.

Greyhounds, though *coupled together*, have been known to break from their keeper, chase and kill a Hare, though at every turn the animal had a manifest advantage, by embarrassing the Dogs to change their direction.

The uncommon *ardour* and *velocity* of the Greyhound, have sometimes been the cause of its destruction. The Rev. Mr. Corsellis was wind-bound at Dover; and a famous Greyhound that was with him there, started by chance a Hare in the neighbourhood, that till this attack had beaten all her pursuers. The Dog was superior to her in speed,
and



Mastiff.

H. Scott

and pressed her so close, that she ran for the *cliff*, as her only chance of escaping; but the Greyhound threw at, caught her on the brink, and went, with the Hare in his mouth, to the bottom of the precipice, where they were both dashed to pieces*.

These Dogs are called *Levrier*, in France; and in Germany, *windspiel*.

THE MASTIFF†.

THE Mastiff is a Dog of great size, and very strong and robust form. Our island, in ancient times, was so noted for its Mastiffs, that the Roman emperors appointed an officer, with the title of *Procurator Cynegii*, whose sole business it was to breed, and transmit from hence to the Amphitheatre, such Mastiffs as would prove equal to the combats of that place. Strabo informs us, that the Mastiffs of Britain were trained to war, and were used by the Gauls in their battles. A well-trained Dog of this kind would, doubtless, be very effica-

* Daniel's Rural Sports, i. p. 312—314.

† *Canis familiaris Anglicus*.—Linnaeus. *Le Dogue de forte race*.—Buffon.

See the Synopsis, p. 20, No. 9, VAR. 10.

cious in distressing such half-armed and irregular combatants as the adversaries of the Gauls seem generally to have been, before the Romans conquered them.

Mastiffs are peculiar to this country. They are now principally of use as watch-dogs; and they discharge their duty, not only with fidelity, but oftentimes with considerable judgment. Some of them will suffer a stranger to come into the inclosure they are appointed to guard, and will accompany him peaceably through every part of it, so long as he continues to touch nothing. But the moment he attempts to lay hold of any of the goods, or endeavours to leave the place, the animal informs him, first by gentle growling, or, if that is ineffectual, by harsher means, that he must neither do mischief nor go away. He seldom uses violence, unless resisted; and in this case he will sometimes seize the person, throw him down, and hold him there for hours, or until relieved, without biting him.

In proof of the great power and courage of this animal, we are informed, that, in the presence of King James the First, three Mastiffs were successively put to fight a Lion; and that, after he had killed two of them, the third came off victorious.

We have one instance recorded of a female Mastiff having reared two animals of a tribe very different from her own. A farmer, living at Hainton,
ton,

ton, near Market Raison, in Lincolnshire, a few years since lost an ewe, the mother of two lambs. He chanced to have, at the same time, a Mastiff bitch, with a litter of puppies. Not having occasion for these puppies, he drowned them, and putting the orphan lambs in their places, the bitch gave them suck, and brought them up with great maternal tenderness. About twelve months after her nurslings had quitted her protection and society, for a mode of life more conformable to their nature, the same bitch heard, by chance, the bleating of a lamb, in a basket that a boy was carrying in his hand. She immediately seized the basket, and having got it upon the ground, made several attempts to extricate the lamb from its confinement. These were to no purpose, for she could not open it; but it was evident, from all her efforts, that she was urged to this singular procedure by the same instinctive affection that she felt towards the lambs she had formerly reared.

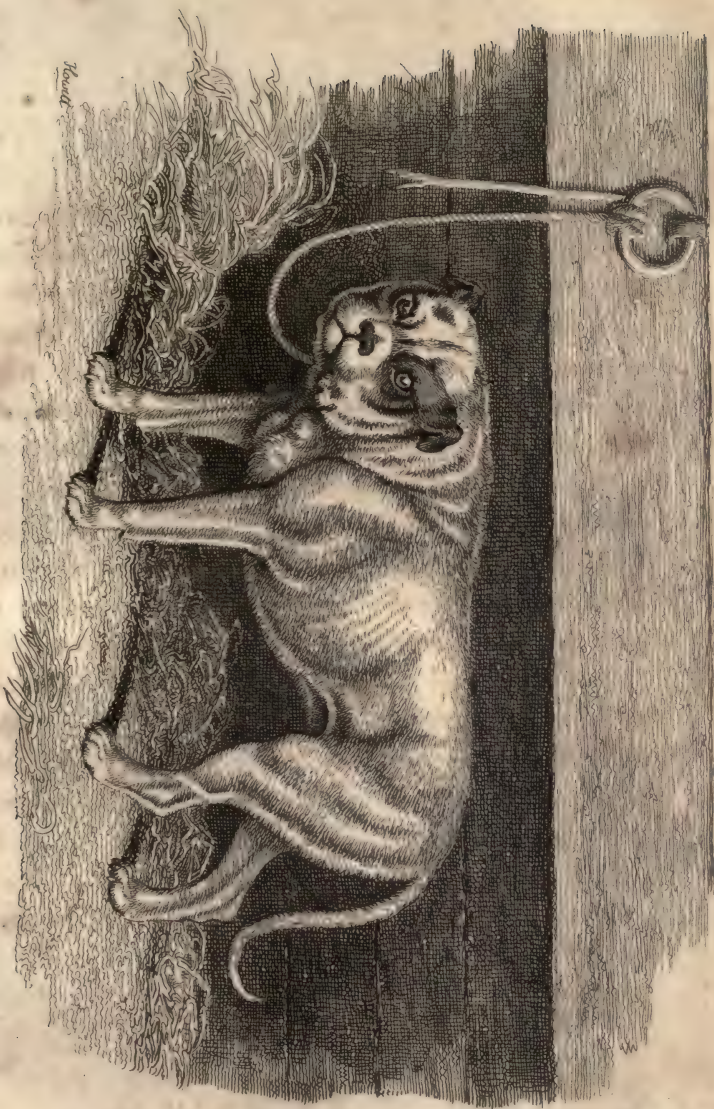
THE BULL-DOG*.

THE Bull-Dog is remarkable for the undaunted and savage pertinacity with which he will provoke and continue a combat with other animals; and, when once he has fixed his bite, it is not without extreme difficulty that he can be disengaged from his antagonist. He is oftentimes fierce and cruel; and seems to possess very little of the generosity of disposition so remarkable and so celebrated in the Dog species. He frequently makes his attack without giving the least previous warning, and often without that discrimination of persons or animals which we observe in most other Dogs.

The Bull-Dog, as well as the Mastiff, is almost peculiar to England; and the breed seems to have been chiefly encouraged for the baiting of Bulls. This ferocious practice, thanks to the increasing humanity and civilization of the people, is, however, now on the decline; and, consequently, Bull-Dogs are at present much less numerous than they were formerly.

* *Canis familiaris molossus*.—*Linnaeus*. *Le Dogue*.—*Buffon*.

See the Synopsis, p. 20, No. 9, VAR. 11.



Wood

Bull Dog.



China & Mr. Son one of his Journeys left his Horse
dog at Mr. Langford, the head Inn at St. Albans
change as to the latter, On his return his first visit it was
where he found his Horse all right but no Terrier, On
and that the dog had disappeared the day after leaving
regular circumstances had occurred in consequence that
the dog was left the Yard Dog not being choiced, had
the dog & used him ill on w. he disappeared, A few more
wards the Servants in the Yard were disturbed with ad
ting of dogs, on getting up to enquire the cause they
re Dog going out of the Gateway & several dogs for
ing were certain was Mr. R. Terrier & found their Ya
id dead. Mr. R. on his Journey home thought of the
circumstances but on his arrival was glad to
the dog & making enquiry as to his return, was in
days after his leaving home, He then enquired
Dog had been missing & was informed that both
Terrier were missing for a few days & that the
returned very much torn as if he had been very
ting From the several circumstances Mr. R. was
the little Terrier for the injuries he had received
atment he had gone for his Companion & for
tain revenge which they had taken most se
n returned triumphantly home.

The above particulars I had not only from
Rawson but Mr. Langford —







Terrier.

Pub. by W. Dawson & J. Harvey, Sept. 7th, 1868.

Hewitt

THE TERRIER*.

THIS Dog has its name of Terrier, or *terrarius*, from its usually subterraneous employment, in forcing Foxes, and other beasts of prey, out of their dens; and, in former times, driving Rabbits from their burrows. It is generally an attendant on every pack of Fox-hounds; and is the determined enemy of all kinds of vermin, such as Weesels, Fomarts, Rats, &c. The Terrier is a fierce, keen, and hardy animal, and will encounter even the Badger, from which he sometimes meets with very severe treatment. A well-trained and veteran Dog, however, frequently proves more than a match for that powerful animal.

Some Terriers are rough, and others smooth and haired. They are generally reddish, brown, or black; of a long form; short legged; and strongly bristled about the muzzle.

With respect to *speed*, although the Terrier is is not remarkable for rapidity of course, yet it has the power of continuing the same pace for many hours successively. An instance of its speed, how-

* *Canis familiaris terrarius*.

See the Synopsis, p. 21, No. 9, VAR. 12.

ever, occurred in the year 1794. For a wager against time, a Dog, that was very small, was made to run the first mile in *two minutes*, the second in four, the third in six, the fourth in eight, and the fifth and sixth in eighteen minutes. He afterwards ran the same distance, six miles, in thirty-two minutes*.

The following is, perhaps, an unparalleled instance of ferocity and affection, in a Terrier, towards the same animals.

During the hunting of a Fox, near Sudbury in Suffolk, by Mr. Daniel's hounds, the Fox ran into a hole in the ground. Two men, with a couple of Terriers, were employed to dig him out, which, after considerable labour, was effected, and the Fox was killed by the Hounds. During the killing, one of the Terriers, a bitch, stole into the same earth; and being observed, the men dug again, and found a female Fox with five cubs, two of which the Terrier had killed in the earth. The other three were saved from her fury, and not long afterwards were put to her to suckle and bring up. The Terrier had one whelp, which was near five weeks old, and the cubs could but just see when this exchange of progeny was made; yet, singular as it may appear, she suckled and

* Daniel's Rural Sports, i. p. 368.

reared them till they were able to shift for themselves*.

The Terrier is the kind of Dog that we usually observe employed to accompany and conduct blind persons. By means of the string fastened to his collar, he leads on his master, with the utmost patience, from door to door; and, whilst the beggar chaunts his miserable ditty, will frequently lie down to repose himself upon the pavement. The sound of money, or the well-known conclusion of the song, immediately rouses him to proceed in his labour. Such, indeed, is the sagacity of some of these Dogs, that, on money being thrown from a window, they have been seen to take it in their mouth, and deposit it in safety in their master's cap or hat.

A gentleman who resided at Forton, near Gosport, Hants, had a small Terrier Dog, to which he was greatly attached, and which usually followed him wherever he went. As, in the summer of 1796, the weather was exceedingly hot, and the animal had upon him many fleas, his master, in crossing a mill-dam, plunged him into the water, to swim to the opposite side, whilst he himself walked round to the bridge. This practice, however, he continued only for a little while; for, one evening, the gentleman was surprised to observe

* Daniel's Rural Sports, i. p. 92.

that his Dog kept considerably a-head of him. At times he would approach nearer, and wag his tail, but still kept at such a distance that there was no possibility of laying hold of him. When he came to the edge of the dam, he stopped, looked round at his master, and immediately plunged into the stream; and, since that time, he as regularly swam over the brook, without any bidding, as his master walked over the bridge.

The same Dog, on being shown a newspaper or a book, and being told to read, would make a most unaccountable noise, betwixt a bark and a howl, for several minutes together.

THE LURCHER *.

Tumbler.

THE Lurcher and Terrier are nearly allied. There are two varieties of the Lurcher; one covered with short thickset hair, and the other with long and harsh hair.

* *Canis familiaris lanarius.*

See the Synopsis, p. 21, No. 9, VAR. 13.



H. Scott

Lurcher.







Turnspit.

This animal, says Mr. Pennant, takes his prey by mere subtlety, depending neither on the sagacity of its nose, nor its swiftness of foot. If it comes into a warren, it does not either bark or run on the Rabbits; but, by a seeming neglect of them, or attention to something else, deceives the object, till it comes within reach, so as to be taken by a sudden spring*.

THE TURNSPIT†.

THE Turnspits are remarkable for their great length of body, and short, and usually crooked legs. Their colour is generally a dusky grey, spotted with black; or entirely black, with the under parts whitish.

These Dogs were formerly employed to run in a wheel, for the purpose of turning meat that was roasting before the fire. Till the present improved modes of performing this business took place, the breed of Turnspits was in considerable

* Penn. Brit. Zool. i. p. 66.

† *Canis familiaris vertagus*.—Linnaeus. *Le Basset*.—Buffon.

See the Synopsis, p. 21, No. 9, VAR. 14.

request. It is now on the decline; and, in the course of another century, will probably be extinct in Great Britain. These animals still continue to be used in most countries of the continent.

THE COMMON FOX*.

TODD.

THE den of the Fox is generally formed either under the surface of the ground, or in some deep crevice of a rock. The situation which the animal seems to prefer to all others, is a dry cover, well sheltered with furze or brushwood, on the sunny side of a hill. It is said, that, by adopting a filthy expedient, he sometimes drives the cleanly Badger from his den; and that, after enlarging it within, and adding the necessary outlets, to allow of escape in cases of attack or danger, he appropriates it to his own use.

This animal sleeps much during the day; and his repose is generally so sound that he may be approached without being awakened. The night is

* *Canis vulpes*.—*Linnaeus*. *Le Renard*.—*Buffon*.

See the Synopsis, p. 22, No. 10.



For.

Howell.

Pub. by W. Norton & Co. New York, Sept. 17, 1868.



his time for prowling abroad; and from twilight in the evening nearly to the dawn of morning, he is in motion and on watch for prey. Somerville, after describing the extirpation of Wolves from Britain, by the tribute which King Edgar imposed on the Welsh princes, proceeds thus:

The wily Fox remain'd
A subtle, pilfering foe, prowling around
In midnight shades; and wakeful to destroy.
In the full fold, the poor defenceless Lamb,
Seiz'd by its guileful arts, with sweet warm blood,
Supplies a rich repast.

Foxes will feed on flesh of any kind; but their favourite food is Hares, poultry, feathered game, and particularly Rabbits. They likewise destroy Moles, Rats, and Field-Mice; and, like the Cat, it is said that they often play with these for a considerable while before they put them to death. They are remarkably fond of fruit; and, in the vineyards on the continent, often do incalculable damage, by feeding on the grapes. The wall-fruit in the Marquis of Buckingham's gardens at Stow, was one summer nearly all destroyed by a Fox, which was at length caught in the garden, in the presence, as I am informed, of the Marquis. When urged by hunger, this animal will feed, and live tolerably well, on carrots and other vegetables; as also on beetles, worms, &c. which in some states of the weather he is able to find in great abundance.

Foxes

Foxes that have their habitations near the sea coast, when better food is scarce, will eat crabs, shrimps, or shell-fish.

The dexterity which the Fox employs in seizing and securing his prey, is such, that the animal has, in nearly all ages, been proverbial for his cunning. His schemes are various. In his approaches to the poultry-house, and his ravages among poultry, the utmost silence and caution are observed. He steals slyly along, and, lest he should be heard or observed, even sometimes trails his body. If there is room for him to creep in under the door, or through the hole formed to admit the fowls, he generally puts many of them to death. It is not his interest to eat them upon the spot, for in this case he could only make a single meal. He therefore carries them off one by one, and, digging holes in different places, at some distance from the farm yard, thrusts them in with his nose, ramming down the loose earth to secure them from discovery. In these places the bodies lie concealed, till the calls of hunger incite him to devour them.

When the Fox is in pursuit of wild game, which, as well as other prey, he is able to scent at the amazing distance of two or three hundred paces, he first makes his approach as near as prudence will allow, and then seizes the bird by a spring. Mr. Stackhouse informs me, that the Fox is able to spring to a vast distance in this pursuit, as he has seen on the Grouse hills, by the traces in the snow.

On pacing the distance, he has generally found it twenty or thirty feet. From the marks, (though the animal is sometimes fortunate enough to succeed,) this gentleman says, it is evident that he much more frequently misses his prey, than secures it.

In warm weather, the Fox will often quit his habitation, in the day time, for the sake of basking in sunshine or enjoying the fresh air. He, however, very rarely lies exposed, but generally chuses some thick brake, where he is secure from being surprised. In his repose, he stretches out his hind legs, and lies on his belly. In this position he espies the birds as they alight on the places near him, and is ready to spring on such as, unfortunately for themselves, come within his reach. Crows, magpies, and some other birds, have such an antipathy to the Fox, that they often give notice of his retreat by the most clamorous notes; and they will, occasionally, follow him with their screams, from tree to tree, to a considerable distance.

That the power of limb and the *speed* of Foxes, are very great, is proved by their having kept Hounds at full stretch, in pursuit of them, in some instances, for eight or ten hours. In one Fox-chase in Yorkshire, some of the Horses were so much fatigued as to die on the field*.

* See the preceding account of the Hound, p. 106.

When the Fox finds himself much pressed by the Hounds, he generally makes towards his den. A Terrier is, in this case, always put in to him, not to seize and bring him out, for that would be impossible against so strong an animal, but merely to keep him at bay, that he may be prevented from burrowing deeper into the ground, till some of the persons present dig him out. If the den happen to be amongst rocks, or under the roots of trees, the animal is perfectly safe, and there are no means of driving him thence. When the retreat to his habitation is cut off, his stratagems to escape from his pursuers are various and surprising. He always takes to the woody parts of the country, and prefers paths that are most embarrassed with thorns and briars. He runs in a direct line before the Hounds, and at no great distance from them; and, if hard pushed, seeks low and wet grounds, as though he were conscious that the scent did not lie so well there as in other places. When overtaken, he becomes desperate, and bravely defends himself against the teeth of his assailants, even to the last gasp.

The following is a singular instance of *sagacity* in one of these animals escaping from the Hounds, and returning to his cover, though conveyed in a cart to a very considerable distance from it.

A Fox was taken in Whittlebury Forest, and sent, by the Duke of Grafton, in a venison cart, to London, that it might be hunted by his grace's Hounds,

Hounds at Croydon. The animal was turned out, and escaped. He returned to his coppice, and was again taken, sent as before, and hunted. The same round of circumstances took place, in the whole, not less than four times; but at last, after a very severe chase, he was killed.

In the neighbourhood of Imber, in Wiltshire, in the year 1793, a Fox, being run hard, took shelter under the covering of a well, and, by the endeavours used to force him thence, was precipitated a hundred feet, to the bottom. The bucket was let down for him. He laid hold of it, and was drawn up some way, when he again fell. The bucket being let down a second time, he secured his situation in it, and was drawn up safe; after which he was turned off and killed by the Hounds.

The voice of the Fox is a kind of yelping bark, which consists of a quick succession of similar tones, at the end of which he frequently raises it to somewhat like the cry of a *peacock*. In winter, and particularly during frost and snow, he yelps much; but in summer is almost entirely silent. His smell is proverbially fetid and offensive; and so exactly resembles that of the root of *crown imperial*, as scarcely to be distinguished from it. This odour proceeds chiefly from certain glands which are situated at the base of the tail.

The Fox will allow himself to be killed with a bludgeon, without uttering any notes of complaint; but he always defends himself to the last, with the

greatest bravery. His bite is dangerous; and the severest blows will not compel him to quit the hold he has once taken. He fights in silence till torn in pieces.

When Foxes range at liberty, in their native covers, they are remarkably playful animals. They may often be seen to amuse themselves with their fine bushy tails, by running, sometimes for a considerable while together, in circles, to catch them.

In a wild state these animals are subject to a disorder similar to that of the mange in Dogs. Mr. Daniel recollects a brace of old Foxes being killed in one season, that had scarcely any fur left upon them. They were so weakened by the disorder, as to be caught almost immediately after they were started by the Hounds*. As Mr. Beckford was going out one morning to course, he saw a Fox sunning himself under a hedge. Observing that he was not able to run, he drove him into a corner, got off his horse, and took him up; but he died not long afterwards. The animal had not a single hair on his brush, and very few hairs on any part of his body†.

The female Foxes usually produce their young ones about the end of March. These, which are generally from three to six in number, are at first

* Daniel's Rural Sports.

† Beckford on Hunting, p. 329.

blind,

blind, and of a darkish brown colour. Foxes breed only once in the year, unless some accident happen to their first litter, in which case they sometimes again bring forth in the course of the ensuing summer. It is on account of the breeding season, principally, that Fox-hunters leave off their pursuit about the month of March; since in one week, they say, the Hounds, by killing a brace or two of bitch Foxes, either in cub, or that have just littered, would destroy as many animals as would yield diversion for a whole season. If the places where the young ones are deposited happen, by any chance, to be discovered or disturbed, the dam never fails, on the very first opportunity, to carry off her cubs in her mouth, to some more concealed habitation.

In April, 1784, the Hounds belonging to Mr. Daniel, were returning home from Bromfield Hall Wood, when one of the Terriers that was with the whipper-in, whined, and seemed very uneasy, at the foot of an oak-pollard tree. The Dog appeared anxious to get into the tree, which was covered with small twigs from the foot to the crown; and on these was seen, very evidently, the dirt left by some animal that had gone up and down the boughs. The man climbed the tree, putting the Dog before him. The instant the Dog reached the top, he was heard to seize something; and the man, to his great surprise, found him with a female Fox that had there four cubs. The height

of the tree was twenty-three feet; and from the top there was a hole about three feet down, in which the young ones were deposited. There was no mode for the Fox to get to or from her offspring but by the outside boughs; and the tree had no bend whatever to render the path an easy one. The cubs were all brought up tame, to commemorate the incident. One of them is well remembered by several persons, at Wood's Hotel, Covent-Garden, where it used frequently to run tame about the coffee-room*.

That the females of this species have a very ardent affection for their offspring, and that they will defend them, when attacked, with the utmost vigour, is well known to almost every one at all acquainted with the habits of the animals. Two or three instances have been recorded, of female Foxes being hunted by Hounds, with a cub in their mouths, with which they chose to burthen themselves, and thus additionally endanger their own lives, rather than leave them behind to be worried by the Dogs.

Foxes continue to grow till they are about eighteen months old; and the duration of their lives is from twelve to fourteen years.

Their skin is clad with a soft and warm fur, which, in many parts of Europe, is used for muffs,

* Daniel's Rural Sports, i. p. 169.

and the linings of clothes. In the mountains of Switzerland, the number of Foxes that are destroyed by different means is almost incredible. At Lausanne there are furriers who have received between two and three thousand skins in one winter. Notwithstanding the fetid smell of the Fox, the inhabitants of some parts of the continent eat its flesh, and particularly during the vintage season, when the animals are said to be always remarkably fat. "The flesh of the Fox (say the editors of the French *Encyclopédie*) is *not so bad as that of the Wolf; Dogs, and even men, eat it in the autumn, particularly when the animals have fed upon grapes.*" Such a recommendation would not, however, render it very tempting to an English palate.

We are informed by Sonnini, that instances have occurred of the Dog and female Fox having, in confinement, produced young ones. We have, however, no account of this cross breed in the Fox's wild state.

The name of the Fox, in Wales, is *llwynog*: in France, *renard*: in Italy, *volpe*: in Spain, *zorro*: in Portugal, *raposa*: in Germany, *fuchs*: in Holland, *vos*: in Sweden, *raef*: in Denmark, *raev*: in Poland, *liszka*: in Hungary, *roka*: in Russia, *lis*: in Lapland, *rubsook*.

In the mountainous parts of Great Britain there are, according to Mr. Pennant, three varieties of the Fox. These differ from each other a little in form, but not much either in their colour or in their general habits of life. They are,

1. *The Greyhound Fox*, which is the largest, and most courageous of the whole, with a white tip to its tail.

2. *The Mastiff-Fox*, smaller in size, but more strongly built than the former, with also a white tip to its tail.

3. *The Cur-Fox*, the smallest of the three, with a black tip to its tail. This, in many parts of our island, is more common than either of the others.

I feel some difficulty in regarding the latter animal as a variety of the Common Fox. The only specific character which Linnæus has given us of *Canis Alopex*, is, that it is smaller, and somewhat darker, than the Common Fox; and that *its tail is tipped with black*. Whether our Cur-Fox be the Brant Fox of America is another point. In the Arctic Zoology we are told that it certainly is not; and that the British Fox, with a black tip to its tail, is not known in America. But, since Linnæus has made the tip of the tail the mark of discrimination, I cannot help feeling an inclination to consider the Cur-Fox as a distinct species. The criterion, as Dr. Shaw justly observes

observes, is too slight; but it is the only criterion which Linnæus has given us. It is much to be wished, that some person, who has opportunity of doing it, would endeavour to clear up the difficulty.

OF THE CAT TRIBE IN GENERAL.

THE animals of the present tribe are, on the whole, perhaps, more savage and ferocious than the last. In their manners they are extremely different. They do not, like those, unite in packs, and openly run down their prey, oppressing it by the power of numbers; nor have they the faculty of tracking it by scent. They are, for the most part, solitary animals, inhabiting the deep recesses of woods and forests, about which they lurk till prey comes within their reach, when they spring upon it at a single, but oftentimes enormous bound, and seldom fail to secure it.

As an adequate recompence for what is generally supposed a want of smelling in the feline tribe, the animals possess an unusually quick sight. This, with respect to their mode of lying in ambush for prey, is of essential service to them; and by it they are enabled to seize many creatures, which otherwise they would lose.

The greater part of the animals are inhabitants only of torrid climates. Among these we enumerate the Lion, Tiger, Panther, Leopard, Ounce, and the various kinds of Lynx. Some are confined exclusively to the old, and some to the new continent; and

and the number of species hitherto described is, in the whole, about thirty. Of these, happily for us, there is only one a native of the British dominions; and this, the Common Cat, instead of being injurious, is rendered an animal of considerable utility to us. By domestication we have been enabled to turn its ferocity against those destructive enemies to our industry, the multitudes of smaller quadrupeds, as Rats and Mice, which, were they allowed to increase with impunity, might in time spread desolation over the face of the whole country.

All the feline species are carnivorous, and never adopt vegetable food, except when urged to it by necessity. Some of the larger and more powerful animals, from their innate ferocity, or from failure of other prey, will venture even to attack mankind.

But, notwithstanding their savage disposition, the species, in general, can by no means be considered as voracious. Their natural appetite is, indeed, rather temperate than otherwise; and most of them are able to bear the privation of food for a considerable while together.

The females produce from three to eight or ten young ones at a birth.

The claws of all the animals are retractile, or capable of being drawn back into sheaths, so as not to touch the ground in walking.

THE WILD CAT*.

WILD Cats are exceedingly ferocious animals. They inhabit extensive woods in most parts of Europe; and were formerly very common in many of the counties of England. By a charter granted in the reign of king Richard the First, to the abbot and convent of Peterborough, liberty is given to hunt, in Northamptonshire, the Hare, the Fox, and the Wild Cat†. There were Wild Cats in several of the woods of Northamptonshire so lately as a century ago; but they are now all destroyed. Indeed, the extended population of England during the last century, and the consequent destruction of forests, and the inclosure and cultivation of waste lands, have nearly extirpated the race from all the counties.

Several of the mountainous districts of Ireland and Scotland, however, yet contain Wild Cats in considerable numbers. They are also occasionally found amongst the woods that border the lakes of

* *Felis catus ferus*.—*Linnaeus*. *Le Chat sauvage*.—*Buffon*.

For the description of the Wild Cat, see the Synopsis, p. 24, No. 11, VAR. 1.

† Morton's History of Northumberland, p. 443.

Wild cat.





Westmorland and Cumberland. In the united parishes of Lochgoil-head and Kilmorich, in Argyleshire, they are more numerous than Foxes, and often commit great depredations among the poultry and lambs. They have their lodgments in the crevices of rocks; and in deep and narrow holes, in the face of dreadful precipices, where it is exceedingly difficult to approach them. In these they produce their young*.

The manners of the Wild Cat are nearly allied to those of the Lynx, and to those of several others of the larger species of its tribe. It may, with propriety, be denominated the British Tiger, since it is, by far, the fiercest and most destructive beast that is found in our island. These animals seldom range abroad to feed, except during the night. Their usual prey consists of the various kinds of quadrupeds, as Hares, Rabbits, &c. that inhabit the neighbouring woods; and also of wood game, and some other kinds of birds.

In their caterwawling noise, and general properties, they agree with the Domestic Cats; but they differ from these very essentially both in their size and appearance. They breed three or four times in the year, and produce several young ones at a litter. The two varieties will breed together; but the offspring are exceedingly

* Sinclair's Statistical Account of Scotland, iii. p. 176.

shy and savage, and cannot, without great difficulty, be rendered in any measure domestic. The perfectly wild breed are said to be altogether untameable, however young they may be when first taken.

Wild Cats may be caught in traps, the baits of which are sprinkled with valerian, and in and about which valerian is scattered. The compiler of a respectable publication, entitled "The Beauties of Natural History," says, that he once saw a Wild Cat that was caught by some of its limbs in a trap. The enraged appearance of the animal, its hair on all sides bristled on end, the furious noise it made, the foam that it had shed around by its hissing and spitting, its formidable teeth, the mad expansion of its claws, and its fierce glancing eyes, he informs us, chilled him with horror.

It is generally considered a dangerous thing to shoot at these animals, unless the mark be certain, and the charge fully sufficient to kill them on the spot. If they happen to be only wounded, they will attack, with fury, the person who injured them; and they have strength enough to prove themselves no despicable adversaries*.

Their

* In the Cabinet of Natural History in Paris, there is a beautiful Wild Cat, which was killed in the neighbourhood of Paris. From the extremity of the nose to the origin of the tail, it measures twenty-

Their fur was formerly used for the linings of robes; but it does not appear to have ever been held in much estimation.

The Wild Cat is called, in Wales, *cath-goed*: in France, *chat sauvage*, or *chat harët*: in Italy, *gatto silvatico*: in Spain, *gato montes*: in Germany, *wild katze*, *boum ritter*: in Denmark, *vild kat*: in Poland, *kot dziki*, *zbik*: in Russia, *stepnaja koschka*.

THE DOMESTIC CAT *.

IN the writings of Aristotle, the Cat is not once spoken of as a domestic animal; and from this circumstance, some persons have inferred that, in his time, it was not (as far as he knew) admitted, in any part of the world, an inhabitant of the house. The silence, however, of this naturalist,

two inches; and the tail is ten inches long. Its height is about fifteen inches. The fur is of a brown grey colour, somewhat resembling that of a Hare. A kind of black band runs along the back. The tail is very full of hair, and has some black annular marks.

Buffon par Sonnini, xxiv. p. 19, Note.

* *Felis catus domesticus*.—Linnaeus. *Le Chat domestique*.—Buffon.

See the Synopsis, p. 25, No. 11, VAR. 2.

only

only tends to prove that Cats were not anciently domesticated in *Greece*; for it is known, that in Egypt they were kept in great numbers, and were objects of sacred veneration there in very remote periods. So much were they respected by the inhabitants of Lower Egypt, that formerly it was made a capital crime wilfully to kill either a Cat or an Ibis; and whoever, even accidentally, caused the death of one of them, was always severely punished.

The Turks have a sacred respect for Cats, originating in a tradition that Mahomet, who flourished in the seventh century, had so great a love for one of these animals, that, being once consulted upon a point of religion, he chose rather to cut off the skirt of his garment, on which the Cat lay asleep, than to disturb her repose by forcibly taking it away*.

The early Britons seem to have entertained a very high sense of the utility of these animals. In the tenth century, the price of Cats was even inserted in the laws of the land. A kitten, before it could see, was rated at a penny; as soon as proof could be had of its having caught a mouse, the price was raised to two-pence; and a tolerably good mouser was rated at four-pence, a great sum in those days. Mr. Pennant considers that this

* Tournefort's *Voyage into the Levant*, ii. p. 63.

high value of the animals proves them not originally to have been natives of the British islands*.

Cats are, in general, very cleanly animals; and when awake, they are almost always to be observed in the act of licking, adjusting, and smoothing their hair. In order to wash the parts of their coat which they cannot reach with their tongue, they wet the insides of their paws, and rub them with these. Linnæus says that an approaching storm is generally indicated by a Cat's washing its face with its fore-foot!

From the circumstance of their extreme cleanliness, and from the general elegance of their form and manners, some people are passionately fond of Cats. Instances have occurred of persons, in our own country, who have not been contented with merely treating these animals well during their life, but in their wills have left legacies, to secure the same good treatment to favourite Cats after their death. On the contrary, there are others who have a peculiar aversion to them: they will not allow them to remain in the same apartment; and sometimes will even faint, or fall into fits, at the sight of a Cat that happens to be near them. This strange antipathy to an animal perfectly harmless to mankind, generally arises from some accidental prejudice attained in early youth, height-

* British Zoology, i. p. 33.

ened, perhaps, by the bad qualities that have been unjustly attributed to the Cat species, even by many medical men and naturalists. Among the latter was the very celebrated Buffon. At the same time that he allows the Cat to be an animal of considerable beauty, and in many respects essentially serviceable to us, he does not attempt to conceal his dislike to it. He considers it only as one of our enemies, which we train up for the purpose of opposing to others that are still more noxious. He says, that it is a treacherous and ungrateful animal, which it is impossible to reduce to perfect obedience, even by the kindest treatment and attention; that, on the least offence, even in the midst of caresses, it will scratch its master and benefactor; and that it is unconquerably addicted to thieving. Other writers have, with great solemnity, assured us, that the breath of the Cat is so pernicious as to occasion consumption in such as happen to inspire it; that the brain is to be considered a mortal poison; and that, even to look stedfastly upon the animal, for any length of time, is very unwholesome. The same writers also declare, that the saliva of an enraged Cat inserted into a wound inflicted by its teeth, will often produce violent and obstinate sores. These direful qualities, however, have no greater reality, than those very extraordinary virtues which the old medical writers have attributed to different parts of these creatures; to the fat, the blood, the after-birth

birth of Cats, and in particular to the head of a black Cat, for the recovery of sicknesses of various kinds.

It is not to be denied that Cats have some bad propensities, and that their natural disposition is not so mild and generous as that of our other domestic, the Dog. If injured or offended, the Cat will not crouch at our feet, in submission to our authority, but will often boldly stand forward in its own defence. It seldom happens that the Cat will commence a fray; but when, by being attacked, it is roused to fury, it has often proved a formidable opponent. Its countenance, which previously had expressed only mildness and content, entirely changes its character, and becomes in the highest degree ferocious. The eyes seem on fire: the teeth are exposed: the animal hisses with vehemence, and seems to spit at the object of its anger. The hair at the same times bristles on end; the ears are thrown back; the tail is swelled with perpendicular bristles; the back is elevated into a curve; and the animal utters, at intervals, the most violent and dreadful cries of rage.

But when Cats are undisturbed, when they are suffered to repose in quiet on our hearths, or without injury to frequent our habitations, they exhibit many pleasing traits of character. Their purring is very expressive of contentment and happiness, of their affection, and sometimes of their desires or inclinations. They have another

L mode

mode of denoting their agreeable sensations, by spreading out and again retracting their claws; and by alternately putting down and raising their fore-legs. Kittens, when they are sucking the mother, press, in the same manner, the teat with their paws. The agitation of the tail, which in Dogs is a signal of pleasure, is, on the contrary, in Cats, very often a mark of rage or cunning. When they run towards any object that pleases them, they generally carry their tail high and extended. When they are inclined to play, they do not unsheath their talons, but seize the hand, or any other object, in their velvet paws, without scratching. It is common for them, in their frolic, to hold the hand firmly grasped, and, lying on their backs, to kick it with the hind feet, with considerable violence. These animals are irritable, and when the play is carried further than is agreeable to them, they will seize the hand in earnest; and, after having inflicted deep wounds with their claws and teeth, will immediately run off to escape from chastisement. Cats, when at rest and not inclined to sleep, usually sit with the fore-part of their body upright, having all the feet close together, and, usually, the tail curved round them. When suddenly roused from sleep, they commonly stretch out first their hind, then their fore legs, and afterwards elevate greatly the middle of their back.

In the manners of the Cat we often observe a remarkable degree of slyness and cunning. If one
of

of these animals happens to espy a mouse, we see her steal towards the spot, but apparently in a careless and inattentive manner; her eye, however, fixed on the unsuspecting and playful victim. When she is sufficiently near, she crouches upon her belly for a moment; and then, by a sudden spring, seizes and carries off her prey. The little creature is seldom much injured by the first gripe; for the Cat generally suffers it to run about the room, and plays with it for some time before it is devoured. Her frolicsome attitudes on these occasions (during which, however, we cannot refrain from commiserating the fate of the poor Mouse) are often exceedingly graceful and elegant. As soon as the Cat relaxes her jaws, and the little prisoner begins to move off, she pats it, first with one, and then with the other of her paws. Resting on her hinder feet, she often puts out both her paws, and holds the Mouse gently betwixt them, drawing it towards her, or allowing it again, for a little while, to escape. Sometimes she suffers it to run to the distance of a yard or two, as if she were altogether careless respecting it, whilst she purrs, raises her back, and rubs herself gently against the wall. She then darts suddenly upon it, again seizes it in her mouth, as at first, and walks off with it to some other place, where, perhaps, she plays over again the same pranks. The unfortunate Mouse has seldom much longer respite; but as soon as the Cat becomes tired of these frolics, which do not often

last many minutes, it furnishes a repast to its merciless victor.

Cats are in general very sagacious animals, and are also susceptible of considerable educational attainments. They may be taught to dance in cadence, and to perform many strange but entertaining feats. Sonnini, as an instance, mentions, that at one of the fairs at St. Germain, there was a troop of Cats, which had been trained to cry out in such a manner as to form a kind of burlesque concert, at which a Monkey presided, who beat time*. Cats, as well as Dogs, have sometimes acquired the knowledge of opening a door by lifting the latch; and an instance occurred in Lyons, a few years ago, of some murderers being discovered by the recollection of a Cat, which happened to have been in the room during the horrid transaction†.

The form of their teeth does not permit these animals to seize their food in the incisors; and

* I have some doubt, however, whether M. Sonnini was not deceived in the instance that he has thus adduced of the educational attainments of Cats. I suspect the exhibition to have been altogether a trick, and that the Cats only cried out at intervals, when the managers of the exhibition contrived secretly to goad their bodies with some sharp-pointed instruments. The account is related in the "Addition à l'Article du Chat, par Sonnini." *Buff. Sonn.* vol. xxiv, p. 44.

† See the anecdote in *Animal Biography*, third edition, vol. i. p. 307.

when fed, instead of taking provisions out of the hand, they prefer picking up bits from the ground. These they divide almost wholly with their side teeth, and swallow entire all such pieces as will easily pass down their gullet.

Few of the more perfect animals are so tenacious of life as the present species. They are, in this respect, proverbial; and (as it is vulgarly believed) can sustain nine times the injuries that would kill any other animal. These creatures can likewise support life for a very long time without food. An instance of this occurred in the year 1781, in a Cat being shut up, by accident, and having no nourishment for twenty-four days, at the end of which, though dreadfully emaciated, she was found still alive.

From the nocturnal mode of life of Cats, and their frequently climbing after their prey to great heights, they are endued with the singular property of generally alighting on their feet whenever they happen to fall. The instant they lose their hold, the animals bend their spine, and make a mechanical movement, as if to save themselves. The consequence is a kind of half turn in the air, which restores to their body the proper centre of gravity, and necessarily makes them fall on their feet. Many other animals of this tribe, several of the Weesels, and even the Fox, are reported to have the same faculty.

Although Cats are not able to see objects in

perfect darkness, they can certainly perceive them with much less light than most other animals. This is owing to the peculiar structure of their eyes, the pupils of which are capable of being contracted or dilated, in proportion to the degree of light by which they are affected. In broad day-light the pupil of the Cat's eye is usually contracted into a mere line: but in the dusk of the evening it resumes its natural roundness, and the animal enjoys perfect vision. The eyes of Cats have been remarked to shine with a bright light, when they are in the dark. This light has been commonly supposed to proceed from reflection; but, as it is frequently observable in perfect darkness, we must look to some other mode of accounting for it. It may, probably, be allied to what we observe in putrifying meat, rotten wood, phosphorus, and the glow-worm.

These animals have a natural aversion to wetting themselves; yet they are extremely fond of fish, either raw or cooked; and they devour these, with voracity, whenever they can get them. Some Cats have so far conquered their aversion as to catch, or attempt to catch, fish, as they lie asleep by the sides, or in the shallows, of streams or ponds. A friend of Dr. Darwin saw a Cat catch a trout, by actually darting upon it in a deep, clear water, at the mill at Weaford, near Litchfield*. And several

* Darwin's *Zoonomia*, 8vo. edit. i. p. 225.

other well-authenticated instances of the like have been recorded. One of the most singular that has come to my knowledge, was related to me by my friend Mr. Bill, of Christchurch. When he lived at Wallington, near Carshalton, in Surry, somewhat more than thirty years ago, he had a Cat that was often known to plunge, without hesitation, into the river Wandle, and swim over to an island at a little distance from the bank. To this there could be no other inducement than the fish she might catch in her passage, or the vermin that the island afforded.

There are several kinds of plants that Cats are partial to. Amongst others, they are extremely fond of rubbing themselves upon valerian*, and marum or cat-thyme†. Like Dogs, they also occasionally eat blades of grass; and, as it is supposed, for the same purpose, as an emetic.

I am informed by Dr. Hamilton, of Ipswich, that it is very difficult, if not altogether impossible, to poison the Cat. Arsenic, corrosive sublimate, and nux vomica, have all failed. A gentleman of Ipswich endeavoured, by means of these substances, concealed in pieces of salmon, to destroy some of a great number of Cats that frequented his garden during the nights, trampling over his flower beds, and essentially damaging his plants. In the mornings he regularly found that the baits

* *Valeriana officinalis*.

† *Teucrium marum*, of Linnæus.

had been eaten; but, in spite of this, the animals continued as numerous as before. That Cats are thus able to resist poison, seems to arise from the peculiar irritability of their stomach, and a tendency of the peristaltic motion to inversion; thus exciting them to vomit immediately on the introduction of substances that are offensive to them. By this means they rid themselves of the poison before it has remained long enough in the stomach to be mixed with the gastric juice, and be dissolved in sufficient quantity to excite any dangerous inflammation. How far opium, laurel-water, or other vegetable narcotic poisons, would operate towards destroying the animals, has not, perhaps, been yet ascertained.

The whiskers of Cats are supposed to be given them for the purpose of ascertaining whether any aperture, through which they are about to pass, be wide enough to admit their bodies. These consist of long bristles, proceeding not only from their upper lips, but also from above the eyes, and from each cheek. When they are all erected, their points lie in the circumference of a circle, at least equal to the circumference of any hole through which their bodies can pass. The animals have likewise the power of erecting and bringing forward the whiskers on their lips; probably for the purpose of feeling whether the place they enter be further permeable or not.

The general extent of a Cat's age is ten or
twelve

twelve years. Sonnini, however, had a Cat that lived seventeen years; and he says, he has been assured by many persons, that they have kept these animals for twenty years and upwards*.

Cats have much less attachment to persons than houses; and when taken to the distance of half a dozen miles or more, even though they have rivers to cross, they will, of their own accord, frequently return to their former habitation. This is supposed to arise from their being acquainted with all the retreats of the mice, and all the outlets and passages of the place from which they were taken; and an aversion to commence the ascertaining of those of their new residence.

There is a considerable difference in opinion respecting the time of gestation of the Cat. Some writers, and among these Linnæus, fix it at sixty-three days; whilst others say that it does not exceed fifty-five or fifty-six days at most. They produce their offspring three or four times in the year, and generally from four to six young ones at a litter.

Since the male Cats are apt, if they discover them, to devour their offspring, the female generally takes care to litter in some place of concealment. Here she suckles her kittens for a few weeks; and when they have strength enough to digest animal

* Buffon par Sonnini, xxiv. p. 14, note.

food, she catchès and brings to them mice and small birds. If she suspects that the male has discovered her retreat, or if she is otherwise disturbed, she will carry them off, one by one, in her mouth, and lodge them in some other place where she is not so liable to be interrupted.

The manner in which the Cat transports her kittens from one place to another, is very pleasing. She first licks them on the neck, as if to prepare them for being seized by that part. She then lays hold with her mouth, so hard as to prevent them from falling out, and yet not so as to give them pain. Thus charged with her important burthen, she runs off with it in her mouth, at the same time elevating her head in such a manner as, in her progress, not to beat it against the ground. The little creature is so motionless in her mouth, as to appear exactly as if it was dead. The mother having found a convenient place, lays it down, forms for it a comfortable bed, and again licks it on the neck; she then leaves it, to fetch in the same manner, one by one, the remainder of her litter.

There are few animals that exhibit more tenderness towards their offspring than Cats. When deprived of these, they have often been known to suckle and rear the deserted offspring of other animals. Instances have occurred of their thus bringing up young Hares, Rats, Squirrels, and Dogs.

Dogs*. These attachments may be accounted for from the ease which the Cats experience by the little animals' drawing off the milk from their teats, distended after the loss of their kittens. But the following is a very unaccountable instance of attachment, authenticated by the Rev. Daniel Lysons. At the house of the late Robert James, Esq. of Putney, a Cat and a pigeon were remarkably fond of each other. Their affection was reciprocal; and the attachment on both sides was steady. What renders the circumstance more extraordinary is, that they were first remarked together on the wall of the garden. The pigeon was afterwards domesticated; and they continued from that time inseparable companions†.

The skins of Cats form, in some countries, a considerable branch of commerce. The greatest quantities come from the northern parts of Europe and Asia. The Russians not only sell them to their neighbours, but send great numbers of them to China. The fur, when rubbed with the hand, particularly in frosty weather, will yield electric sparks; and if a Cat, clean and perfectly dry, be placed, during frost, on a stool with glass feet, and

* For the Hares, Squirrels, and Rat, see *Animal Biography*, 3d edit. i. p. 308, 309; and for the Dogs, see *Buffon par Sonnini*, addition to the article Cat, xxiv. p. 36.

† Lysons's *History of the Environs of London*, p. 11.

rubbed for a little while in contact with the wire of a coated phial, the phial will become effectually charged.

The flesh of these animals is eaten in several countries. Some of the negro tribes consider it as excellent food.

A Cat belonging to Dr. Coventry, professor of Agriculture in Edinburgh, had lost her tail by accident, when she was young. She had many litters of kittens; and in every litter there was one or more that wanted the tail, either wholly or in part.

Mr. Stackhouse, of Pendarvis in Cornwall, informs me, that he has been witness to the continuance of a breed of tailless Cats, both in his own family and in that of a gentleman of his acquaintance.

In Wales the male Cat is called *gwrcath*, and the female, *cath*: in France, both male and female are called *chat*, or *chat domestique*: in Italy, *gatto*: in Spain and Portugal, *gato*: in Germany, *katz*: in Holland, *kater*: in Denmark, *kat*: in Sweden, *katta*: in Poland, *kot*: in Russia the male is called *kot*, and the female *koschka*.

OF WEESELS IN GENERAL.

THE Weesels are all carnivorous animals. From their slender and lengthened bodies, short legs, and the very free motion allowed in every direction, by the loose articulations of the spine, they are well formed for pursuing their prey (such, principally, as Rats, Moles, and other small quadrupeds) into their deepest recesses, in the holes of old buildings, the crevices of rocks, or burrows in the ground. Even where the surrounding space will little more than admit their entrance, so great is the flexibility of their bodies, that they can generally turn round whenever they please, in order to come out. Constituted by nature to subsist on animals, many of which are endowed both with strength and courage, the Weesels possess an undaunted, and, in their wild state, a ferocious disposition. They likewise exhibit a great degree of cunning and sagacity, as well in the pursuit of prey, as in themselves avoiding the attacks of such animals as would otherwise destroy them.

All the English species, it is believed, are able to mount into trees after their prey, and even to climb walls of considerable height, with great agility. Out of our five species, there is only one,
the

the Pine Martin, that is not occasionally to be found in the neighbourhood of farm-yards, and houses in which poultry and pigeons are kept. Among these they sometimes commit enormous depredations, often killing many more than they can either eat or carry off to their places of concealment. Some content themselves with sucking the blood, or eating the brain, leaving the remainder of the body untouched behind them.

These animals, for the most part, issue from their hiding places in search of food only during the night. Many of them are known to catch birds, and particularly game, when at roost in trees, or on the ground. They are all extremely voracious of eggs, and some of them are fond of honey or fruit; but none, at least of the English species, have been known to prey upon fish.

They are a most lively and active race; and when abroad, and in a native state, may often be seen to amuse themselves in elegant and pleasing gambols. It is possible to tame, and, in some measure, to domesticate the greater part of the species; but their odour is in general so fetid and offensive, particularly when they happen to be irritated, that few persons have been induced to make the attempt. The claws of Weesels are not retractile, or capable of being withdrawn into sheaths, as in the animals of the preceding tribe; nor do they stand in any need of having these extremely sharp, since in taking their prey they depend much
more





Martin

Flaxid

more on their mouth than their claws; and when once their hold is firmly fixed, it is no easy matter for an animal, even of tolerable size and strength, to escape from their gripe.

The females produce from three to ten young ones at a birth; and some of them litter more than once in the year.

The furs of nearly all the species, are useful in a commercial view.

THE COMMON OR WHITE-BREASTED MARTIN*.

MARTERN CAT. SWEET MART. MARTLET.

ALL the motions of this elegant and interesting animal are marked by grace and agility. Its body is surprisingly flexible; and, in its progress upon the ground,

* *Viverra foina*.—Shazv. *Mustela foina*.—Linnæus. *La fouine*.—Buffon.

For the description of this animal see the Synopsis, p. 26, No. 12.

The Common and the Pine Martin so nearly resemble each other, both in their external appearance and internal conformation, that many writers have considered them as merely varieties of the same species.

ground, it seems to move rather by a succession of short leaps, than either to walk or run. It climbs the highest walls with facility; and often enters pigeon and poultry houses, where it destroys, in abundance, eggs, pigeons, and fowls. It is likewise very destructive to game, and particularly to pheasants, amongst which it frequently makes great havoc. To compensate, in some measure, to the farmer and the sportsman, for these depredations, the Martin also devours Rats, Mice, Moles, and other vermin of the same description. The time in which it is usually occupied in search of prey, is the dusk of the evening, or during the night; and, in these predatory excursions, it is often caught in traps laid for the purpose, and baited with birds. The Martin is said to be a great enemy to Cats; and it is asserted that it will attack even a wild Cat, which, although a much stronger animal, is always worsted, and often killed in the combat.

species. The colour of the hair on the neck and breast, which in the Martin is white, and in the Pine Martin yellow, is the only characteristic that can be depended on. It is true that naturalists are seldom inclined to designate species only by colour, since these are frequently known to vary. In the present case, however, the distinction is ascertained to be a permanent one. The inhabitants of all countries where the two animals are found, esteem them different, appropriate to each its peculiar name, and have in no instance been mentioned as confounding them together. In the Pine Martin, the fur of the upper parts of the body is more dark than that of the Common Martin; but the lustre of the latter is by much the most brilliant.

The

The Martin is sometimes selected by sportsmen for the purpose of instructing young Fox-Hounds to hunt. This animal, by running into the thickest bushes it can find, teaches the hounds to run cover. When closely pursued, it climbs the nearest tree; and its agility is astonishing, for though it frequently falls from the tree into the midst of the Hounds, each intent on catching it, yet the instances are few indeed of a Martin's having been seized in that situation.

When caught young, this animal is easily rendered tame and docile; and it then exhibits a great degree of playfulness and good humour. Its smell is not, like that of most of its species, fetid and unpleasant, but partakes in some measure of the odour of musk. This proceeds from a yellow liquor secreted in two glands, the openings of which is situated, one on each side, near the base of the tail.

Although few or none of the other species, on account of their unpleasant smell, can conveniently be permitted to live in habitable apartments, the Martin may very well be allowed this indulgence. One of these animals, some years ago, was rendered so tame, that it was suffered to run at liberty about the kitchen of the Bald-faced Stag on Epping Forest*. The attachment of the

* Daniel's Rural Sports, i. p. 360.

Martin is not, however, in all cases to be relied on. If it can once get loose, it will generally make its escape.

A Martin, taken very young, was reared by M. de Buffon. It was easily tamed, but appeared incapable of attachment, and continued to retain so much of its wild disposition, that it was never suffered to go at large. It, however, contrived several times to slip its body from the belt by which it was held. The first time it ran to a little distance from the house, and in the course of a few hours returned, but without exhibiting the slightest tokens of joy or affection to any one. Being hungry, it made its usual whining noise for food. Its excursions became afterwards, by degrees, more long; and at last it disappeared altogether. It was then a year and a half old, and had every appearance of being at full growth*.

With the exception of vegetables, no kind of food came amiss to this animal. It was very fond of honey; and preferred hempseed to any other grain that was offered. It drank frequently. It slept sometimes for two days without intermission; but at other times, on the contrary, would keep entirely awake for that or a longer period. Before

* From this circumstance, M. de Buffon was led to conjecture, that the lives of these animals seldom exceeded the term of ten or twelve years.

it went to sleep, it always coiled itself up into a round position, and covered its head with its tail. Whilst awake it was perpetually in motion; and it was very amusing to observe with what eagerness and agility it sprang at Mice or poultry that happened to come within the reach of its chain*.

This celebrated naturalist had several other Martins, at different times, which had been caught in traps at a more advanced age than the above. These, however, continued extremely wild; bit every person who attempted to touch them; and all died from refusing to take nourishment.

The Martin produces young ones more than once in the year; generally in the spring and autumn. The younger females do not bring more than three or four, whilst those of more advanced age have six or seven at a litter. The female makes her nest in the hole of a decayed tree or wall, in the cleft of a rock, or sometimes in a deserted Rabbet burrow. A Martin, which had been shot on the moors above Holmfirth in Yorkshire, having escaped into its retreat in the ground, was dug out; and at the further end of the burrow there were found as many feathers, feet, and bones, of grouse and other birds, as would have filled a couple of Winchester bushels.

The female Martin has four teats, all of which

* Buffon par Sonnini, xxv. p. 361, 362.

are situated on the belly. These are not very perceptible, except when she is with young, or when she has just brought her young ones into the world. She is said to have little milk, in proportion to her size. But this natural defect is amply compensated to the offspring, by her bringing home to them eggs and live birds; and thus early habituating them to a life of carnage and plunder. As soon as the litter are able to leave the nest, they are led by the dam through the woods, where the birds immediately recognise their natural enemies. Whenever they run abroad in the day time, some of the small birds never fail to attend them, as they do the Fox and other predatory animals, and exhibit strong symptoms both of animosity and terror.

This animal is not very uncommon in many of the southern parts of Great Britain and Ireland. Its usual habitation is a lodge, formed in the hollow of some decayed tree in a wood; but in mountainous countries it resides only amongst rocks. Hence, in most parts of Wales, it has the name of *bela graig*, or rock Martin.

The Martin is subject to great quantities of worms, of the species *filaria martis* of Linnæus. These are usually of a white colour, very long and extremely slender. They are found in nearly all parts of the body, lodged betwixt the muscles and the exterior teguments. In a single animal, Redi discovered near two hundred and fifty, and all of them

them alive. The Polecat, and several other animals of the present tribe, have the same kind of worms under their skin.

In some countries the flesh of the Martin is eaten; but, from its musky flavour, it is not very palatable to persons unaccustomed to it. The skin is a valuable fur; and in Europe is much used for linings to the gowns of magistrates, and for other purposes. In some parts of Turkey, Martins' skins (which are exported thither chiefly from France and Sicily) are in great request. They sell in England for about seven shillings each.

The name by which this animal is known in Scotland is *mertrick*: in Wales, *bela graig*: in France, *fouine*: in Italy, *foina*, *fouina*: in Spain, *marta*, *gibellina*: in Germany, *marder*, *huhss-marder*, *hâus-marder*, *tuch-marder*, *buch-marder*, *stein-marder*: in Holland, *marter*: in Hungary, *menjet*: in Sweden, *mard*, *moerder*: in Denmark, *maar*.

THE PINE OR YELLOW-BREASTED MARTIN*.

PINE WEESEL.

It is an improper distinction which some naturalists have made betwixt the Martin and the Pine Martin, to call one the *Martes fagorum*, the Beech-forest Martin; and the other, *Martes abietum*, or the Pine-forest Martin: for the animals occasionally inhabit all kinds of forests, and very frequently such where neither beech nor fir trees are to be found.

Whilst the Martin has its dwelling near the habitations of men, the Pine Martin is found only in distant, thick, and undisturbed woods. In these its general retreat is in the hollow of some tree; so high up, and in other respects so situated, as to afford perfect security. It seldom ventures so far abroad as to enter the open and inhabited countries. Whenever it happens to be pursued, it

* *Viverra Martes*.—Shaw. *Mustela Martes*.—Linnaeus. *La Marte*.—Buffon.

For the Description of the Pine Martin, see the Synopsis, p. 27, No. 13.

Pine Martin.





escapes by running, with the utmost agility, even up the smoothest and most perpendicular trees.

During the day, the Pine Martin, like most of the other animals of its tribe, remains concealed, and in a state of sound repose, in its nest. From this it issues at the commencement of twilight, in search of food, and devours great numbers of Squirrels, Hares, Mice, and other quadrupeds. It also destroys prodigious quantities of birds, and particularly the various species of wood game with which the northern countries abound. Its courage is such that it will often attack animals that are much larger and more strong than itself. When pressed by hunger, it will sometimes seize hold of a Sheep or Lamb; and, like the Martin, will even combat the fury of the Wild Cat. The track which both species of Martins leave in the snow, has the appearance of having been made by some large animal. This arises from their progressive motion being made by a succession of leaps, and each of the two feet, both before and behind, striking the ground at the same time.

This species, as well as the last, has a kind of musky odour, which to some persons is rather agreeable than otherwise. It is likewise easily rendered docile. We are informed by Gesner, that he had a Pine Martin which was extremely playful and entertaining. It used even to go to the houses of the neighbourhood; and always returned home when it wanted food. It was particularly fond of

a Dog with which it had been bred up; and would frequently play with him, like a Cat, lying on its back, and pretending to bite him. The cry of these animals is very shrill and piercing; but it is never uttered except when they are in pain or distress.

We are told by M. de Buffon, that the females do not prepare a bed for their young, and yet that they lodge them very commodiously. When they are near their time, he informs us that they climb to the nest of some unfortunate Squirrel, drive away the owner, enlarge the dimensions of the habitation to suit their own purpose, and there deposit their offspring. Sometimes they seize, in a similar manner, the nests of owls, buzzards, or other birds. They breed in the spring of the year, and produce only three or four young ones at a litter*.

The fur of the Pine Martin is considered greatly superior in fineness, beauty, and value, to that of the last species. The part most in estimation is that which extends along the back, from the neck to the very extremity of the tail. In the northern districts of America, Pine Martins are found in the greatest abundance. At the Hudson's Bay Company's sale, in 1743, no fewer than 12,370 good skins, and 2360 damaged ones, were disposed of;

* Buffon par Sonnini, xxv. p. 102. -

and, about the same time, the French brought into the port of Rochelle, from Canada, upwards of thirty thousand.

Pine Martins are sometimes, though rarely, observed in the woody and thinly inhabited districts of Wales and Scotland, and two or three of the northern counties of England. In temperate climates they are seldom met with; and in the warmer climates, never.

In Wales this animal is called *bela goed*: in France, *marte*: in Italy, *marta*, *matura*, *martaro*, *martora*, *martorello*, *martire*: in Spain and Portugal, *marta*: in Germany, *feld-marder*, *wild marder*: in Holland, *marter*: in Hungary, *njescht*: in Austria, *edlmarder*: in Sweden, *mard*: in Denmark, *maar*: in Poland, *kuna*: in Lapland, *natte*: in Russia, *kunitza*.

THE POLECAT*.

FITCHET. FOUMART. FOULMART.

THE Polecat is not afraid of the presence of mankind, but approaches with confidence our dwellings, mounts to their roofs, and often resides in barns, hay-lofts, or other places that are not much frequented. From thence he issues, under the shadow of night, to commit his depredations on eggs and poultry. He is exceedingly active, and runs very fast. In the act of running, his belly seems to touch the ground; but, in preparing to jump, the animal arches his back very much, by which the projectile force of his body is greatly increased. In farm yards, the Polecat makes less noise, but commits more mischief than the Martin. If he cannot convey the fowls away, deterred by the narrowness of the entrance, he is said to eat the brain on the spot, and to carry off the heads

* *Viverra putorius*.—Shaw. *Mustela putorius*.—Linnæus. *Le Putois*.—Buffon.

For the description of the Polecat, see the Synopsis, p. 28, No. 14.





to his place of concealment, leaving the bodies behind.

In Lorraine, and some of the adjacent cantons, Polecats are very numerous; and consequently there, as elsewhere, they commit great havoc in the poultry yards. Yet, says Sonnini, such are the superstitious prejudices in their favour, that the inhabitants will on no account attempt to destroy them. They pretend that Polecats never commit any damage in the dwellings where they reside; thus, at the same time that they know and acknowledge their voracious disposition, they believe that the animals entertain a strangely unusual respect for hospitality*.

The Polecat, during summer, generally lives in woods, thick brakes, or about rabbit-warrens. Here, if he cannot find ready made a hole that suits him, he forms for himself, in the ground, a retreat not usually more than two yards in length, which, if possible, he contrives to end among the roots of some large tree. Issuing from thence, he often commits surprising depredations on game and Rabbits. A single family of Polecats, left undisturbed, it is said, are sometimes sufficient to destroy a whole warren. It is asserted that these animals are so fond of honey, that in winter, when the bees are weakened by the rigours of the season,

* Buffon par Sonnini, xxv. p. 113, note.

they have been known to attack hives, and voraciously to devour their contents.

That the Polecat will sometimes prey upon fish, is a fact that was known to several of the old writers on natural history, and is noticed both by Aldrovandus and Jonston. A curious fact, illustrative of this propensity, is recorded in Bewick's History of Quadrupeds. During a severe storm, a Polecat was tracked in the snow, from the side of a rivulet, to its hole at some distance. On examining this hole, it was found to contain eleven fine eels, the fruits of some of the animal's lately-performed nocturnal excursions.

The following method of destroying these voracious animals is often adopted by warreners. They set box traps in the bottom of ditches, or under walls or pales, fencing up the ends of the traps, for four or five yards aslant, and two or three yards wide at the entrance, with earth, bushes, or broken pales; so that no vermin of this description can pass without entering the traps. When the traps are thus placed, a trail of Rabbits' paunches is drawn from one trap to another; and the baits are red herrings, half broiled. The ends of the traps are rubbed with them, and a part of each herring is afterwards hung upon the nail over the bridges of the traps. If both ends of the box traps be painted white, and rubbed with the entrails of any animal, Hares or Rabbits will be deterred from

from entering; and at the same time the vermin will have greater allurements to enter*.

The voices of the Martin and Polecat are said to be very different; that of the former being shrill and loud, and that of the latter somewhat deep and hollow. Both the animals, however, have a harsh and angry growl, which they often repeat when irritated. The smell of the Polecat is proverbially fetid, the animal being furnished, like several others of its tribe, with certain receptacles for secreting a thickish fluid, which has a peculiarly strong and offensive odour. When the animal is heated or enraged, the stench is sometimes perceptible to a very considerable distance. The fur, notwithstanding, is both beautiful and valuable. It is said, however, that the skins taken from such animals as are killed in winter, are the most valuable, from their being far less fetid than those of Polecats caught at any other season of the year.

The females produce their young, from three to six in number, in the beginning of summer. This is usually done either in or near the outhouses of some farm; and they continue with their offspring whilst the males are gone out to reside in the fields or woods. Like the Martins, they do not suckle them long, but soon accustom them to animal food.

* Daniel's Rural Sports.

The Polecat has been known to breed with the Ferret. And as the race of Ferrets, by long domestication, are apt to lose their savage nature, it is said to be customary with warreners sometimes to cross their breed with a Polecat. The offspring of the two animals are of a colour partaking, in some measure, of the colour of each, or of a dingy yellowish brown.

In the northern regions of the continent, this animal, at the commencement of winter, changes its dark hair, and assumes another coat, which has a whitish tinge. Professor Pallas observed the Polecat in this wild state, in Russia, and in several parts of Siberia.

The name given to the Polecat in Wales is *ffwlbard*: in France, *putois*, *puant*: in Italy, *fœtra*, *puzolo*: in Spain, *putoro*: in Germany, *iltis*, *iltis*, *ulk*, *buntsing*: in Holland, *bonsing*, *boutsem*: in Hungary, *goreng*: in Sweden, *iller*: in Denmark, *ilder*: in Poland, *vydra*, *tchorz*: in Savoy, *pouttet*: in Lapland, *boaid*, *boitta*, *goa*, *aige*: in Russia, *lasitza*.





Howitt

Common Weasel.

THE COMMON WEESEL*.

MOUSE-HUNT. VARE. WHITRET. WHITRED.

Like the Polecat, the Weesels usually take up their residence, during winter, in granaries, barns, or other outbuildings; but in summer they range abroad, and then seek for shelter in thickets or hedge-rows. In their wild state they are of a shy and rapacious disposition. They catch their prey chiefly during the night; and they have sufficient powers of body to prove very destructive to numerous animals, many of which might be thought much more strong and courageous than themselves. Of the havoc which these animals sometimes commit amongst the Rabbits of a warren, the following is a very remarkable instance, communicated to me by a gentleman, from his personal knowledge, and on whose veracity I have the most perfect reliance.

In the warren at Wakefield Outwood, in Yorkshire, a Weesel was one day observed in the act of dragging along a young Rabbit, which it had

* *Viverra vulgaris*.—Shaw. — *Mustela vulgaris*.—Linnæus. La Bellette.—Buffon.

For the description of the Wcesel, see the Synopsis, p. 29, No. 15.

just killed. The little animal was watched to a burrow, the repository of its plunder; and the mouth was carefully stopped up, till a spade could be brought to dig it out. On turning up the earth, there were found lodged, at the bottom of the hole, no fewer than *fourteen couple* of small Rabbits, all of which had evidently been conveyed thither by this voracious and destructive invader. The reason given for such an enormous accumulation of provisions was, that, although the Weesel usually satiates itself with some part of the blood of the animals it kills, it never devours the remainder of its prey till it is in a state of putrefaction.

The Weesel is likewise an inveterate enemy to all the animals of the murine tribe, entering their holes, and sometimes devouring the whole of their bodies except the teeth. Mr. Kerr mentions an instance of eighty field Mice having been found in one Weesel's nest*. Whilst the Weesel thus acts the Tiger towards all the smaller quadrupeds which come within its reach, it is itself well defended, by its extreme agility of body, and quickness both of sight and hearing, from the attacks of various larger predatory animals, which otherwise would destroy it. Whenever it is ranging abroad, it is observed to be very watchful, constantly looking round on all sides with great caution, to see

* Kerr's Animal Kingdom, p. 182.

that the way is clear, and that no attack is threatened.

When the Weesel enters a hen-roost, he never attempts to seize the old and strong birds; but, with great sagacity, singles out the pullets and young chickens. These he kills by biting them on the head; and he then, one by one, carefully carries away what he has destroyed. All his manœuvres in pursuit of prey are conducted with the greatest silence, so that oftentimes it is not possible to discover his depredations till some time after they have been committed. In addition to the destruction he makes amongst poultry, he will suck their eggs with great avidity. In this operation he begins by making a small hole at one end, from which he contrives, without difficulty, to lick out the contents.

The motion of this animal on the ground consists of unequal and precipitate leaps. The Weesel is not, indeed, so active as some others of its tribe. School-boys very often pursue, and would always overtake it, had it not generally the cunning to ascend the first tree that it comes to.

In return for the depredations which the Weesel is guilty of, it renders itself useful to the farmer by ridding him of Rats, Mice, and other vermin of this description. It likewise occasionally enters the habitations of Moles, in pursuit of these animals. This is proved by its being, at times, caught in the traps laid by Mole catchers.

The cry of the Weesel, which, indeed, is never exerted but when it is injured, is rough, and very expressive of anger. Its smell is strong and offensive; much more perceptible during hot than cold weather. When pursued or irritated, this will sometimes infect the air to a very considerable distance. Notwithstanding the general character that this little creature has acquired for intrepidity of disposition, it is said to be always seized with convulsions when much terrified.

If Weesels are caught whilst young, their manners will become mild and engaging. They will attach themselves to any person who regularly feeds and attends them; and will always recognise him both by sight and smell. Their odour is indeed an objection to their being kept in habitable apartments; but this is not very unpleasant, unless at times when the animals are irritated: and it is said that, by feeding them on milk and vegetable food, it may in a great degree be overcome.

A correspondent of M. de Buffon having found a brood of young Weesels, resolved to bring one of them up tame; and his endeavours perfectly succeeded. The animal at length became so much attached to him, that, when on holidays he amused himself in the public walks, it would constantly follow him, although the places were generally crowded with people.

This interesting little creature was fed with milk, or boiled meat. It ate little, and would
usually

usually finish its repast in less than a minute. When awake, it was always inclined to be familiar and frolicsome. It would play with its owner, run over his clothes, and creep into his pocket, his sleeves, or bosom, without in any instance forgetting itself, and becoming of its own accord quarrelsome or ill-tempered. It would eat at table with him ; lap water out of his goblet ; and often, by the most engaging manners, invite him to play with it. During, however, the very short interval of its feeding, it would not suffer itself to be touched without showing signs of great irritability at the interruption. Sometimes, in the mere playfulness of disposition, it would bite rather keenly ; but in this case, a slight chastisement always prevented a repetition of the fault.

Whenever a chicken inadvertently came within its reach, this Weesel would immediately spring at, and seize it. But it did not dare to attack larger fowls. Whenever it attempted to approach them, they always put it to flight by repeated blows with their beaks. With respect to the chickens, it was an amusing sight to observe the great degree of cunning, and the various feints that were employed by the little creature to take them by surprise.

Another Weesel, kept by the same person, M. Giely de Mornas, though caught when very young, was not quite so tame ; for when it was hungry, it would often bite very keenly. Its owner, therefore, kept near its bed a little whip,

which was the instrument of its punishment, whenever it appeared enraged, or attempted to bite. On all occasions, after offending, when it saw this implement taken down, it trembled, crouched with its belly close to the ground, and bent down its head, in evident token of fear.

This little animal, which to its owner was usually very submissive, was towards other persons exceedingly petulant and ill tempered; and would bite severely all those who thoughtlessly attempted to play with it. Cats were, at all times, the objects of its enmity. It bit the nose of a large mastiff Dog, which one day came to smell at it, in its owner's hands. On such occasions, it exerted its shrill cry of passion, *chi, chi, chi, chi*; and always emitted its fetid odour, which generally caused the animals immediately to run off. It was at all times anxious to seize on chickens that happened to approach it; and in some instances, it has destroyed a whole brood, of ten or twelve, at a time.

When it slept during the day, it usually selected a recess of its owner's cabinet, where it had his pocket handkerchief for its bed. On these occasions it coiled itself up into a very small compass, and in somewhat of a spherical form, having its head betwixt its two hinder legs. Its sleep was very profound; and the animal was sometimes heard to snore. At night, it would frequently get betwixt the sheets of its master's bed, and
having

having searched out one of the corners, which formed a hollow place, would sleep there for hours together. As soon as the animal awoke, it always stretched its limbs, and afterwards arched its back, (much in the same manner as we observe in Cats,) before it began to move about. It frequently yawned.

As soon as it was perfectly asleep, its master could unfold it, and, suspending it by the head, could swing it, like a pendulum, for five or six minutes, backward and forward, without interrupting its repose. In this state all its muscles appeared perfectly relaxed, and its spine, almost beyond conception, flexible.

This Weesel was generally very playful; and had various entertaining tricks and frolics. Sometimes it would stretch itself out on its back or belly; at other times would run up its master's clothes, and bite him with great gentleness, much like a young Dog at play. When its master struck the table with his finger, it would generally run round his hand, raise itself upright, and jump about in a pleasing manner, uttering at the same time a kind of murmuring noise, expressive of the satisfaction it experienced. These efforts, however, soon fatigued it, and it would fall asleep almost immediately afterwards. Such a love had this little creature for liberty, that it was always impatient of confinement, and would never suffer itself to be put into its cage without

expressing signs of discontent and dislike. At different times it gnawed asunder four of the small upright sticks, in order to escape.

The voracity of this little creature was so great, that after eating it was generally found to weigh about one fifth part more than when its stomach was empty.

The writer of the above accounts informs us, that the power of smelling, in all the Weesels which he kept, was exquisite. They could discover, at the distance of twelve paces, a bit of meat, though no bigger than a cherry-stone, and folded up in paper. He says that he has been much surprised to observe a Weesel which was very hungry, break its wire chain, leap upon him, enter his pocket, tear open a small packet, and devour, almost in an instant, the food that was concealed in it. Their sight is likewise remarkably acute; and their eyes, like those of the Cat, are often luminous in the dark.

This writer asserts, that a Weesel is able to creep into a hole only seven or eight lines in width*.

According to the original account given of the Weesel, by M. de Buffon, it was considered impossible to render these animals perfectly tame. In his supplementary writings, however, we are informed, that all the individuals which were brought to him, had been caught after they were

* Buffon par Sonnini, xxv. p. 130—144.

full grown. They continued so savage, that he was obliged to have their canine-teeth sawed off, and to chastise them frequently; and, after all, he could never soften their disposition much. Since it is now perfectly ascertained that Weesels may be domesticated, it is a consideration of importance, whether the introduction of them into ships might not be of service, in clearing them of those multitudes of Rats with which they are oftentimes known to be infested.

The female Weesel generally brings forth her progeny in some outhouse or decayed tree, in the spring of the year. The number of young ones at a litter is from four to six. She prepares for them a comfortable nest of straw, leaves, and moss. We are assured by M. de Buffon, that, in his neighbourhood of Montbard, a female Weesel, with three young ones, was taken out of the body of a Wolf that had been hung on a tree by the hind feet. The Wolf was in a state of putrefaction; and the Weesel had formed her nest, of leaves and herbage, in the thorax.

In the northern parts of the continent, Weesels change their colour in winter, and become white. Mr. Pennant speaks of having seen them white, in Isla, one of the western islands of Scotland. The Russian peasants catch these animals by means of Dogs, or with springs and other snares. The skins of those taken in winter sell

at from two to ten sous each; and the tails alone are often worth two or three sous apiece.

In Wales this animal is called *bronwen*: in France, *belette*: in Italy, *donnola*, *ballottula*, *benula*: in Spain, *comadreia*: in Portugal, *doninka*: in Germany, *wisele*: in Holland, *Weezel*: in Sweden, *vesla*: in Denmark, *voesel*, *la-kat*, *rasel*: in Poland, *laska*, *laseizka*: in Hungary, *menjet*: in Norway, *rös-kat*: in Russia, *lasmitzki*.

THE STOAT, OR ERMINE*.

THE name of *Stoat* is given to this animal when the upper parts of its body are of a brown colour; but when, in the northern countries of Europe, it is found, during winter, entirely white, except the black tip of its tail, it has the appellation of *Ermine*, or *White Weesel*.

* *Viverra erminea*.—Shaw. *Mustela erminea*.—Linnaeus. *Le Roselet* ou l' *Hermine*.

For the description of this animal see the Synopsis, p. 30, No. 16.



Stoat or Ermine.



The usual haunts of the Stoat are woods, hedges, and meadows; and especially about brooks, the banks of which are covered with bushes. Sometimes, but less frequently than the Weesel, it inhabits barns, granaries, and other outbuildings. It is a bold and ferocious animal; and, when pressed by hunger, will often attack creatures that are of much larger size than itself. Such is its agility, that it is able fairly to run down either a Hare or a Rabbet; and, in its pursuit of prey, it evidently hunts by scent. I am informed by a gentleman of my acquaintance, that he was one day standing with his gun in the narrow path of a wood, when a Rabbet, in great apparent agitation, ran swiftly across. A few moments afterwards a Stoat followed, precisely in the same track. They crossed the path again once or twice, the Stoat behind, and all the way hunting with its nose close to the ground like a Spaniel. At length the Rabbet was wearied out, and sat down in the path. The Stoat was no sooner within sight of its prey, now at rest, than it made a surprising leap of more than two yards, and fixed itself firmly on the Rabbet's back. This gentleman immediately fired, and killed both the animals at the same shot. A nearly similar circumstance afterwards occurred in the presence of the same person.

The Rev. Revett Sheppard informs me, that he has often seen Stoats in the act of hunting Rabbets. He says, that when they get into a warren, they will thread

thread all the holes they come near, passing from one to another with amazing swiftness, till they are able to discover and seize upon their prey.

During some part of Professor Pallas's residence in the northern countries of Europe and Asia, he collected together, into iron cages, several wild Ermines, in order to make observations on their manners and natural disposition. They were much more ferocious than the Weesel; and, during the whole time that he kept them, lost very little of their original character. Such was their voracity, that, in the course of a day, they would generally devour more food than was equal to their own body in weight. They would take food from the hand, when it was offered in small pieces. During the day-time they continued, for the most part, asleep and tranquil. But as soon as the night approached, they always seemed uneasy, and made every possible effort to escape from their prison. Any thing of wood which happened to be about their cages, they gnawed with so much vehemence, as in a short time to cut through a very considerable thickness. When irritated, they always sprang, with rage, upon the object that offended them, exerting a kind of cry, or shrill whistle, not unlike the chirp of a sparrow; their blood-red eyes, at the same time, sparkling almost like fire*.

* Traduction des Voyages de Pallas, quoted in Buff. Sonn. xxv. p. 160, note.

The care that is taken by nature for the preservation of her productions, is peculiarly manifest in all those animals which change the colour of their hair or fur according to the different seasons of summer and winter; and, of these, few are more celebrated than the Ermines. Were their red summer colour to be continued when all the country is covered, for months, with snow; or their white winter colour, whilst the ground is clad with verdure; their appearance would be much too conspicuous for them to escape the attacks of innumerable enemies, which (by the havoc they would commit among them) might endanger the existence even of the whole race.

In consequence of this change of habit in the Stoat, the same animal has frequently been mistaken, at different seasons of the year, for two distinct species. The following facts will, however, dispel any doubts that may still be retained on the subject.

When M. Daubenton was at Montbard, in the beginning of March, 1757, an Ermine that had been caught in the neighbourhood was brought to him. This animal was entirely white, except the tip of the tail, which was black: the white colour had, however, a slight tinge of yellow, perceptible only when the animal was held in certain positions with respect to the light. It was kept in a cage, with the design of observing whether, and at what time, it would assume its brown coat; and whether,

in

in confinement, it would, on the approach of the following winter, again take its white one. Some tints of brown were soon observable amongst the white hairs; and so early as the ninth of March, all the upper parts of the face, the sides of the muzzle, and the head, became of a reddish brown colour. This colour also, in a short time, extended along the neck, and the upper part of the body, as far as the rump, in form of a longitudinal fillet or band, about half an inch in width. Some of the same colour then appeared on other parts of the face, and on all the four legs. M. Daubenton observed some little tufts of white hair adhering to the bottom of a wire partition, under which the animal had frequent occasion to pass. The friction of the back of the Ermine against this, had stripped off all the white hair on the ridge of the back, and thus left the brownish fillet or band before mentioned. On the seventeenth of March there remained of the white hairs, only a few on the muzzle, the head, the thighs, and the tail. By the end of the month, the summer habit was in every respect completed.

In the ensuing autumn, M. Daubenton watched the animal with great attention, to remark at what time the first white hairs, announcing the winter's change, would appear. But his hopes of a change were entirely disappointed. The cage of the animal was kept in a sheltered but open place, and the cold for a considerable while was very violent.

Nevertheless,

Nevertheless, the Ermine continued to retain its brown coat, as in the preceding summer, till the month of March, when it died*.

The above animal is described, in very few words, by M. de Buffon. He says that it continued extremely wild till the last; and that, although it was a pretty little creature, yet its nauseous odour rendered it very unpleasant. It had lively eyes, and a pleasing countenance; and its movements were so rapid, that it was almost impossible for the eye to follow them. It was usually fed on eggs and flesh, but would never eat the latter till it was quite putrid. It disliked honey; and M. de Buffon having, with great cruelty, kept it for three days without any other food, it died after eating a small quantity†.

The female Stoats breed in the same manner, and produce about the same number of young, as the Weesels.

The skins of Ermines are a valuable article of commerce in several countries of the continent, and particularly betwixt the Russians and Chinese. They are employed in Europe for ornamenting robes of state, and for various parts of female dress. The black tips of the tails are

* Description de l' Hermine, par Daubenton, quoted in Sonnini's edition of Buffon, xxv. p. 154—157, note.

† Buffon, par Sonnini, xxv. p. 158.

considered as peculiarly valuable, and always sell at high prices.

The Stoat is sometimes, but not often, found in its white state in the northern parts of Great Britain, where it is called a *white Weesel**. It is, however, easily distinguishable from the Weesel, by the tip of the tail being bushy and black.

In Wales this animal is called *carlwm*: in France, *roselet*, or *hermine*: in Italy, *armellino*: in Spain, *armingo*, *armelina*: in Portugal, *arminho*: in Germany, *hermelin*: in Holland, *hermyn*, *hermilyn*: in Hungary, *pedjmet*: in Sweden and Denmark, *hermelin*, *lekatt*: in Poland, *gronostay*: in Norway, *hermelin*: in Russia, *gornostai*.

* Morton informs us that he has sometimes seen this animal in a white state, in Northamptonshire. *Morton's History of Northamptonshire*, p. 442.

OF OTTERS IN GENERAL.

NINE species of Otters have been discovered in different parts of the world, but of these only three are known in Europe; and but one, the common Otter, has been found in the British dominions. The rest are confined entirely to the lakes and large rivers of the new continent.

In a wild state they are, in general, fierce and untractable animals. They live, for the most part, on fish; but many of the species will feed even on carrion, when fish is not easily to be procured. Some of them also devour frogs and other reptiles.

They all swim with great ease and readiness, both on the surface of the water and below it. None of them, however, are able to continue immersed for a long time together, without putting their noses above the surface, to expel the foul air from their lungs and take in a fresh supply. As, therefore, the Otters do not, strictly speaking, live in the water, but only frequent it occasionally for the purpose of procuring food, none of the species can properly be denominated amphibious. In fact, they all live on land, having burrows, or dens, in the banks of lakes or rivers, (out of the reach of the water,) in which the females produce and nourish their offspring.

The animals in general are solitary, and seldom to be observed in greater numbers than a pair together. A few of the foreign species, however, congregate in immense troops or herds.

In "Sir John Sinclair's History of Fifeshire, a *Sea Otter* is mentioned as inhabiting the sea coasts of that country*. It is described as being of much larger size, and as having a rougher and more shaggy coat than the Common Otter, of which, probably, it is only a variety.

The Otters, when compared with Weesels, are animals of large size. There are only two known species whose weight, when full grown, does not exceed twenty pounds. None of them are able, like the Weesels, to climb into trees; nor can any of them, with a curved body, and straightened tail, make the leaps which are so remarkable in those active little animals.

* Sibbald's History of the Sheriffdoms of Fife and Kenross, 8vo. p. 111.





Scott

Otter.

Pub. by W. Darton & J. Harvey Sept. 7. 1828.

Body 24 inches Tail 10.

THE COMMON OTTER*.

It is well known that the Common Otter derives nearly his whole subsistence from the water. He swims, with great ease, at all depths; and the situation of his eyes, towards the front of the head, allowing him to observe whatever passes above him, he has a particular advantage when lurking at the bottom in search of prey. The eyes of fish do not enable them to discern objects that are immediately beneath them, consequently the Otter can at any time seize them by the belly, without much exertion. This animal is said, likewise, to hunt for his food always against the stream; and as all species of fish do the same, he has thus an advantage in seizing them by surprise from behind. The devastation committed by Otters in rivers and ponds is sometimes enormous. They usually destroy several fish at a time, and (unless incited by extreme hunger) they devour only the upper parts of the body.

It is a circumstance not generally known, that

* *Lutra vulgaris*.—Shaw. *Mustela lutra*.—Linnaeus. *La Loutre*.—Buffon.

For the description of the Otter, see the Synopsis, p. 31, No. 17.

these animals do not exclusively confine their depredations to fresh water. Otters which inhabit the neighbourhood of sea coasts frequently visit the ocean, and sometimes intermix with Seals, in the pursuit of sea-fish. Mr. Stackhouse informs me that he has seen six or eight Otters together, at the *Land's End* in Cornwall, far removed from any river.

In very hard weather, when its natural sort of food is not easily attainable, from the water's being covered with ice, the Otter will kill Lambs, or poultry; and, in one instance, an Otter was caught in a warren, where he had come to prey on the Rabbits. In the year 1793, as two gentlemen were shooting, at Pilton in Devonshire, a large Otter burst out of some brakes, was seized by one of the pointer Dogs, and after severely biting the Dog, was killed by the gentleman's beating him on the head. This Otter was at the distance of at least *five miles* from any river or pond that could supply him with fish*. When animal food of all kinds is wanting, which indeed can seldom be the case to the Otter, he will eat the young branches, and the bark, of such trees as grow by the sides of streams; or sometimes he will even eat grass.

The lungs of the Otter are larger and more deep than that of most other quadrupeds. From this

* Daniel's Rural Sports, i, p. 371.

conformation it is that he is enabled to remain for a considerable while together under water. Mr. Stackhouse, who has attended a good deal to the manners of the Otter, is of opinion, that one of these animals, in perfect health, might continue submersed for fifteen or twenty minutes, without injury. He informs me that a gentleman of his acquaintance once caught, in a trammel net, in the river Wye, a large Otter, which, when taken out, was found to be quite dead. The animal had been drowned, from not having had breath enough left to serve whilst he gnawed for himself a passage through the meshes.

The habitation of the Otter, according to information that I have received from different persons of veracity and observation, is seldom the entire production of his own labour. I am told that he adopts, as the place of his residence, any hole, convenient for his purpose, which he finds under the roots of trees, or in the clefts of rocks, near the water; that this retreat is always infected with the stench of putrid fish; that, near the outlet there are scattered the heads, bones, and oftentimes corrupted parts of the bodies of fish; and that the track to the den is often trodden like a common path-way.—Mr. Pennant gives a somewhat different account. He says that this animal constructs its own den. That it burrows under-ground in the bank of some river or lake; and that it always makes the entrance of its hole under water, work-

ing upward to the surface of the earth, where it forms a minute orifice for the admission of air. He adds, that the more effectually to conceal its retreat, the animal often contrives to make this little air-hole in the middle of some thick bush*.

The Otter is a cunning, and at the same time an exceedingly ferocious animal. Whenever it is attacked, it will defend itself with courage and vigour to the last. An Otter, without knowing it, passed near a gentleman who was angling for trout in the river Wandle. The gentleman unscrewed the butt end of his fishing-rod, and struck it, with all his might, on the head. The animal in a moment turned upon him, and fought with the greatest ferocity; nor was it at last killed without considerable danger.

It is possible, however, when the Otter is caught young, to render it nearly as docile and domestic as a Dog. There was an Otter, in 1775, at the abbey at Autun, in France, in a perfect state of domestication. It was a female, and had been reared with milk from the time it was caught, till it was about two months old, when it was fed on soup, fish, and other food used in the convent. It would come to any person who called it by its name, and would play with a Dog and Cat with which it had been early acquainted; but it exhibited symptoms of the greatest dis-

* Penn. Brit. Zool. i. p. 94.

like to all other animals. The place of this animal's repose was usually, in the night, a bed in one of the rooms; and during the day, a heap of straw. It would occasionally plunge its head and fore-feet into a vessel of water which stood near its bed; and after shaking itself, would go out into the court-yard for exercise, or to sleep in the sunshine. It seemed to have lost the natural habits of its kind; since, being taken one day to a pool of water, it was afraid of going into it, but only wetted its head and feet, as in its chamber. When it was thrown in, it instantly swam to the shore and got out.

There was, about two years ago, within a couple of miles of Cupar Angus, in Forfarshire, in the possession of a gentleman farmer, an Otter, which had been in a domestic state for considerably more than twelve months. This animal was as tame as a Dog, and, every night, slept in a bed with one of the farmer's sons. He still retained his natural love of fish, and, in the day time, regularly frequented a loch in the neighbourhood, for the purpose of procuring this food; but would always come out of the water, when called by any person of the family with whom he lived.

Mr. Edwards, of Little Waltham Hall, in Essex, had an Otter, which on all occasions followed him like a Dog; and every afternoon, when its master slept in his chair, the Otter regularly stationed itself in his lap. It had milk given to it; but it

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chiefly

chiefly fed on fish, which it caught in the ponds, in the gardens and grounds near the house. It was at last accidentally killed by one of the maid-servants striking it on the nose, with the handle of a broom*. Kalm informs^{us} that in America he has seen Otters as tame as Dogs. These animals would follow their masters wherever they went, and would jump out of a boat into the water, and always return to them after satisfying themselves with fish†.

When the Otter is properly trained and educated, he is capable of rendering essential services to his master. By some perseverance in the training, he may be even taught to catch fish, and to give them up without devouring any part of them.

The plan of education that has been laid down for this purpose, and been found to answer, is as follows.

The young Otter is, for some little while, to be fed on milk or soup, and to have no animal food of any kind given to it. Bread is recommended as afterwards a substitute for these; and with this it must have the heads of fishes. As soon as it has formed an attachment to the person who feeds it, which will always take place in the course of a short time, its education should commence. A

* Daniel's Rural Sports, i. p. 373.

† Kalm's Travels in North America, i. p. 208.

truss of leather stuffed with wool, in the shape of a fish, and in size proportioned to the width of the animal's mouth, is then to be made; and when this is used, the animal is to have round his neck a collar, which will tighten at pleasure, and to which is attached a cord some yards in length. The Otter is first to be led gently about by means of the string and collar, till it will follow its master of its own accord. A word of command, as "*come here,*" is then to be adopted; and whenever this is pronounced, the animal must be pulled forcibly to its master, till it is obedient and comes without hesitation. As soon as it is tolerably perfect in this, the collar is to be turned, and tightened till the Otter opens its mouth, into which the truss is to be put, and the words "*take it,*" to be loudly pronounced. If it drops the truss, which will be the case for several times at first, the same operation is to be repeated till the animal will hold it at command. Then loosen the cord, that it may drop the truss, pronouncing at the same time the words "*loose it.*"

When the Otter is tolerably expert in these manœuvres, the truss being held with one hand near the ground, (taking particular care that there is no sand,) its master must draw the animal towards it by the cord held in the other, at the same time retreating a little with the truss. Then tightening the collar, he is to say loudly, "*take it;*" on which the Otter will very soon learn to seize hold of it.

This exercise ought to be continued till it will seize the truss on the slightest motion of the cord. The next part of its education is to teach it to deliver the truss into the hand of its master. When the animal has the truss in its mouth, its master is to draw it gently towards him by the cord affixed to its collar, and then taking hold of the truss, is to say, "*loose it.*" After this exercise has been continued for a few days, and the animal will come to its master when called, seize the truss when commanded, run after it when thrown before, bring it to its master, and, when ordered, give it up to him—some food, a piece of bread, for instance, is to be thrown down, and he is to be taught to bring and deliver up that in the same manner, without injuring it. The last part of this operation is to take him to the edge of a river or stream, of which the water is clear and not deep. Throwing a small dead fish into the water, the Otter will readily seize it, and, by means of the cord affixed to the collar, may be made to bring it out, and deliver it to his master. The same is done with live fish; but as soon as he delivers these, he is to have the heads as a recompence for his trouble.

This kind of chase has, in some instances, been so well taught, that the owner of an Otter has derived very considerable benefit from it. An inhabitant of Christianstadt, in Sweden, of the name of Nillson, was daily supplied by an Otter with as much

much fish as entirely supported his family*. Dr. Goldsmith speaks of having seen an Otter go to a gentleman's pond, at the word of command, drive the fish into a corner, and, seizing upon the largest of the whole, bring it off in his mouth to his master†. An Otter belonging to a person of the name of Campbell, who lived near Inverness, has been known to catch for its master sometimes so many as eight or ten salmon in a day. As soon as one was taken from it, the animal immediately dived in pursuit of another. When it was tired, it would refuse to fish any longer; and was then rewarded with as much as it could devour‡.

The hunting of the Otter was formerly considered an excellent sport in this country; and Hounds were often kept solely for that purpose. The sportsmen divided, and went some on each side of the river, beating, in their progress, the banks and sedges, with Dogs. If there was an Otter in that quarter, the print of his foot (technically called his *seal*) was soon to be seen in the mud. Each hunter was armed with a spear, to attack the animal when he *vented*, or came to the surface to breathe. If the Dogs found, the sportsmen viewed the animal's track in the mud, to find

* *Mélanges d'Histoire Naturelle*, par M. Alleon Dulac, ii. p. 252.

† *History of Animated Nature*, iv. p. 146.

‡ *Bewick's Quadrupeds*, p. 452.

which way he had taken. Somerville has described the chace of the Otter, apparently with great correctness, but in terms somewhat too animated for those persons who have no delight in blood.

On the soft sand

See there his *seal* impress'd! And on that bank
Behold the glittering spoils, half-eaten fish,
Scales, fins, and bones, the leavings of his feast.
Ah! on that yielding sag-bed, see, once more
His *seal* I view. O'er yon dark rushy marsh
The sly goose-footed prowler bends his course,
And seeks the distant shallows.

See, there he dives along!

Th' ascending bubbles mark his gloomy way.
Quick fix the nets, and cut off his retreat
Into the shelt'ring deeps. Ah, there he *vents*!
The pack lunge headlong, and protended spears
Menace destruction.

Ah, there once more he *vents*!

See, that bold Hound has seiz'd him: down they sink,
Together lost: but soon shall he repent
His rash assault. See there escap'd, he flies
Half drown'd, and clambers up the slipp'ry bank
With ooze and blood distain'd. Again he vents;
Again the crowd attack. That spear has pierc'd
His neck; the crimson waves confess the wound.
Fix'd is the bearded lance, unwelcome guest,
Where'er he flies; with him it sinks beneath,
With him it mounts; sure guide to ev'ry foe.
Inly he groans, nor can his tender wound
Bear the cold stream. Lo! to yon sedgy bank
He creeps disconsolate; his numerous foes
Surround him, hounds and men. Pierc'd through and through,
On pointed spears they lift him high in air;
'Wriggling he hangs, and grins and bites in vain.

When

When he is wounded, the Otter always makes directly to land, where he maintains an obstinate defence against his adversaries. The females, on these occasions, will sometimes emit a very shrill squeal; but a male Otter never utters any note of distress, however keen his wounds may be. The bite of these animals is so severe as frequently to snap asunder the bones of Dogs that are set on to attack them.

The Otter is only to be caught by means of an unbaited trap; for he is so delicate in his feeding as to reject every kind of bait. This trap must be placed near his landing place, which will be found by carefully examining the edges of the river, or pond, for his traces. The trap must be set in, and covered with, mud, to prevent his seeing it. The instant the trap strikes, the Otter plunges into the water with it, where its weight, preventing his rising to the surface, soon destroys him. The trap will seldom be drawn more than fifteen or twenty yards from the spot, and, with a grappling iron, may soon be recovered.

But, although the Otter rejects all baits in a trap, an instance occurred, in August, 1799, in the river Buckland, of one of these animals taking a live bait. An Otter darted from his hole, and seized the bait of a gentleman trolling for pike, who, in consequence of the animal's violent struggles, thought that his bait was taken by an overgrown fish. After a long contest, to the great astonishment of the troller,

troller, and of other persons who happened to be on the spot, he drew the Otter to the shore completely exhausted*.

The females go with young about nine weeks, and produce them (usually four or five in number) some time in the month of March. These, at first, are ugly little creatures, and very different, both in shape and appearance, from their parents. When they are six weeks or two months old, the dam drives them from her nest, to seek a residence and procure food for themselves. Otter's cubs have been known to be suckled and reared by Bitches. An instance of this occurred a few years ago, near South Molton in Devonshire.

These animals differ from the Seals, with respect to their amphibious nature, in the *foramen ovale* of the heart: this is closed at the birth, and no vestige of it is afterwards to be observed†.

The skin of the Otter is valuable at all times of the year, except about Midsummer, when the animals change their fur. The flesh is an unpleasant food, from its fishy and muddy flavour. The Romish church permits it to be used on maigre-days; and Sonnini justly observes respecting it, that no kind of food can be adopted which is better calculated to express that mortification presides at the table.

* Daniel's Rural Sports, i. p. 374, 375.

† Raii. Syn. quad. p. 188.

Otters are found in most of the counties of Great Britain and Ireland; but particularly in those which border on the sea.

In Wales they have the name of *dyfrgi*: in France, *loutre*: in Italy, *lodra*, *lodria*, *loutra*: in Spain, *nutria*: in Germany, *otter*, *fisch otter*: in Holland, *otter*: in Hungary, *njescht*: in Sweden, *utter*, *witer*: in Denmark, *odder*: in Poland, *wydra*: in Savoy, *leure*: in Norway, *otter*, *sleuter*: in Lapland, *zhievres*: in Russia, *wydra*.

The inhabitants of the Isle of Skie informed Mr. Martin, that a kind of Otter, with a white spot on the breast, and considerably above the ordinary size, was sometimes seen in that island. They call it the *king of the Otters*; and describe it as being an extremely shy and timid animal.

OF THE BEAR TRIBE IN GENERAL.

BADGERS have been separated from the Bear tribe of Linnæus by Mr. Pennant, and by several of the latest French naturalists, but apparently without sufficient reason. The former rests his chief distinction on the claws of the fore-feet being very long and straight. And, by the French writers, the *Bears* are said to have their body somewhat elongated in proportion to their stature, and the tail very short: the *Badgers*, to have their body low on the legs, and the tail either short or of moderate length.

The European Badger is the only animal belonging to the tribe, which is now to be found a native of the British dominions. But there is evidence, in the accounts of several ancient writers, that the *Common Black Bear** was once an inhabitant of the northern districts of Britain. Caledonian Bears are mentioned by Martial; and Plutarch relates, that the Romans imported Bears from Britain, which at Rome were much admired. In some of the ancient Welsh manuscripts, the Bear is enumerated among the British beasts of chase; and its

* *Ursus arctos* of Linnæus.

flesh is asserted to have been held in the same esteem with that of the Boar. In the History of the Gordon family it is related, that in the year 1057, one of the Gordons killed, in Scotland, a fierce Bear; and, as a reward for his prowess, the king directed that he should carry a Bear's head on his banner. All these animals have, however, been extirpated many centuries.

The females breed only once in the year, and few of them produce more than two cubs at a birth. Those species which inhabit countries in high northern latitudes, retire into their dens at the commencement of severe weather, and remaining in a torpid state through the whole winter, do not appear abroad till the returning spring again calls them into life.

Some of the animals, huge and unwieldy as they may seem, are capable of climbing into trees, in pursuit of prey, or to escape from their enemies. Such, however, is generally their weight, and the form of their body, that they cannot, like the smaller climbing quadrupeds, descend with their head foremost; but, with great apparent clumsiness, they descend backward,

THE BADGER*.

BROCK. GREYPATE. GREY.

THE Badger is an indolent and stupid animal, passing the greater part of its life in sleep. During the whole day it continues in its den, and never appears abroad till the shades of night secure it from observation; when, for a little while, it ranges around in search of food. As soon as its appetite is satisfied, it again retreats to its place of repose. From thus indulging in indolence and sleep, it sometimes becomes excessively fat. Most naturalists have asserted that this animal passes the severe weather of winter in an entirely torpid state. A German writer has taken upon himself to assert, that such is not the case; but that the Badger preserves its heat and animation through the cold months, by its address in burrowing so deep into the ground as to be beyond the reach of the frost. This writer has, however, entirely neglected to inform us on what food it is that the Badger subsists during this period!

* *Ursus meles*.—*Linnaeus*. *La Blaireau*.—*Buffon*.

For the description of the Badger, see the Synopsis, p. 33, No. 18.

Badger.



Howitt.



From the circumstance, principally, of the Badger's being an animal of great muscular powers, and unusual strength of body, he has suffered very severely from vulgar prejudices. He has been accused by the farmers of destroying Rabbits and Lambs. But surely the mischief he commits cannot be very extensive, since it is not yet satisfactorily ascertained whether he lives on animal, or on vegetable food. There are many reasons for supposing that, except in scratching up the ground in search of roots, he is perfectly harmless and inoffensive. The writers who defend the Badger from the charge of being carnivorous, assert, that, besides roots, he feeds on fruit of various kinds; on grass, insects, and frogs.

The habitation of the Badger is a den, generally deep in the earth, the opening to which is in some woody or sheltered place. In mountainous countries he frequently finds some cleft in a rock, which, with little trouble, he is able to form into a comfortable residence. He is a cleanly animal; and his subterraneous mansion is always exceedingly neat.

In compensation for want of speed, in the Badger, Nature has endowed him with strength, and with such weapons, both offensive and defensive, that scarcely any creature will venture, singly, to attack him. The address and courage with which, on all occasions, he defends himself, have caused him frequently to be *baited* by Dogs,

P as

as a popular amusement. Although his disposition is naturally indolent, yet on these barbarous occasions he uses the most vigorous efforts of strength. Throwing himself back on his haunches, his motions are so rapid that the Dogs are often desperately wounded on the first assault, and compelled to give up the contest. His skin also is so thick and loose, as not only to resist the impressions of their teeth, but also to suffer him, even when within their gripe, to turn round upon and wound his adversaries in their most tender parts. In this manner he gallantly resists the repeated attacks of men and Dogs from all quarters; till, overpowered by numbers, and enfeebled by wounds, he is at last compelled to submit to his miserable fate.

These animals, if taken young, may easily be domesticated. They will play with Dogs, and readily follow any person who is in the habit of feeding them. They are neither mischievous nor voracious; and it is said, that in a state of domestication they prefer raw meat to any other food, though they do not refuse either bread, fruit, or vegetables. They are such chilly animals, that, when permitted to range at pleasure about a house, they will scarcely ever quit the fire; and they often approach so close to it as to burn themselves.

Badgers usually live in pairs; but at the time of the female's producing her young, they separate. She collects a quantity of herbage, which she carries

carries to the bottom of her den, and there converts into a commodious bed. She brings forth in the summer, and generally has two or three young ones at a birth.

It is said that Badgers are subject to a disorder similar to the mange; and that this will infect Dogs which penetrate into their burrows. The greatest age which these animals are supposed to attain is from eight to twelve years. It was formerly believed that they lived to a very old age; and that when, in consequence of this, they lost their sight, they kept entirely in their burrows, and were fed by their offspring. Another ancient opinion was, that the legs on their right side were always longer than those on the left; and that, consequently, when they ran, they at all times took care to chuse the slope either of a hill, a bank, or a furrow.

One of the modes of catching the Badger is, when the animal is ranging abroad in the night, by fastening a sack into the mouth of his den. One person remains near the hole on watch, whilst another beats round the fields with a Dog, in order to drive him home. As soon as the man at the hole hears, by the rustling, that a Badger has run in, he immediately seizes the mouth of the sack, ties it and carries it off. This, in many parts of the country, is termed "*sacking the Badger.*"

Another mode is by means of a pitfall, dug across the accustomed path of one of these animals. This is covered over with small sticks, or

boughs, with their leaves on; and when the Badger treads on them, they give way and let him in.

The digging of Badgers out of their dens is generally a work of time; and, if the Terriers do not keep the animal constantly at bay, he is able to penetrate the earth, and bury himself faster than the workmen can follow him*.

The skin of the Badger, when properly dressed, with the hair on, is not easily penetrated by moisture, and consequently is often used for knapsacks, pistol furniture, and the coverings of trunks. The Highlanders make their pendant pouches of it. The hair is also made into brushes, to soften and harmonize the shades in painting, which, therefore, are called *sweetening tools*. The flesh is in great esteem among the Chinese. Mr. Bell speaks of having seen the flesh of a dozen Badgers exposed at the same time for sale in the markets at Pekin. In England the hind quarters are the only parts of the Badger that are eaten; but the hams are considered as superior in flavour to those of the Hog. The fat was formerly in great request for ointments and salves.

Badgers are occasionally found in most of the wild and uncultivated parts both of Great Britain and Ireland.

* Daniel's Rural Sports, i. p. 364.

This animal, in Wales, is called *pryf llwyd*, *pryf penfreth*: in France, *blaireau*, *taisson*: in Italy, *tasso*: in Spain, *tasugo*, *texon*: in Portugal, *texugo*: in Germany, *tachs*, *dachs*, *dar*: in Holland, *das varkens das*: in Hungary, *bors*: in Sweden, *grafswin*: in Denmark, *grævlin*, *brok*: in Poland, *jaswicc*, *borsuc*, *kol-dziki*, *zbik*: in Norway, *gravling*, *sviin-sax*: in Russia, *barsuk*, *iaz welz*.

OF MOLES IN GENERAL.

THE Moles are easily distinguishable from all other quadrupeds, by their peculiar shape, and their singular habits of life. Their body is thick and muscular. Their head is likewise thick, and has a somewhat lengthened snout, the upper jaw being considerably longer than the lower. These animals have no external ears; and their eyes are so small as generally to be concealed by the fur. All the legs are short, but particularly the fore ones, which, externally, are scarcely visible: they are, however, furnished with feet unusually large and powerful. The fore-feet are admirably adapted to the wants of the animals, which, as they live almost wholly beneath the surface of the ground, sometimes have to dig subterranean passages, or galleries, of many fathoms in length.

Connected with these galleries, the Moles form hollow and spacious nests, in which the females produce their offspring; and in which the families reside, during those months of the year when the cold weather forbids their going abroad, or continuing their accustomed labours.

Seven species of Moles have been discovered in different parts of the world. Of these, five are found, exclusively, in North America; one at the
Cape





Common Mole.

Blarina brevicauda.

H. Hoyle del.

Pub. by W. Dutton & J. Harvey Sept 5th 1868.

Length to the tail 5 $\frac{3}{4}$ Inches

Cape of Good Hope; and one, the Common Mole, in Europe.

They are, for the most part, harmless animals, except where, in cultivated countries, their numbers become very great. In this case they sometimes prove injurious to the labours and industry of the farmer.

The fur of all the species is peculiarly soft and fine.

THE COMMON MOLE*.

MOLD-WARP, OR WANT.

It is asserted that the Mole has not hitherto been discovered to inhabit any part of Ireland. If this be correct, it is a very surprising fact, since the animal is an inhabitant of almost all the cultivated grounds of Great Britain. It is chiefly found in those where the soil is loose and fertile. Here its subterraneous labours are carried on with great ease; and it has a full supply of nutriment in the roots, worms, and larva of insects, which always abound in

* *Talpa Europea*.—*Linnaeus*. *La Taupe*.—*Buffon*.

For the Description of the Mole, see the Synopsis, p. 35, No. 19.

such situations. During the winter months, it feeds almost entirely under the earth; but in the warm nights of summer, it often runs about in the open air in search of food, and thus, occasionally, becomes the prey of owls, and other predacious animals.

Since the extremes of heat and cold are equally pernicious to Moles, we find that they work their covered ways or galleries at different depths, according to the temperature of the atmosphere at the time. In warm weather, these are usually four or five, or sometimes not more than a couple of inches below the surface; but in cold, and particularly in frosty weather, they are much deeper. When their habitations are attacked, the animals will frequently sink themselves, by digging immediately from thence a perpendicular hole some feet in depth. I have been informed by an experienced mole-catcher, that, in one instance, he dug with his spade to the depth of four feet after a Mole, and that the animal at last escaped him. These little creatures are so expert in forming a passage for themselves in the ground, that if they are put upon the grass in any field where the soil is tolerably light, they will penetrate it, and cover themselves almost in a moment. Even on a gravelly and hard turnpike road, a Mole has been known completely to cover itself in less than five minutes.

The principal times at which Moles work during fine weather, are said to be at sun-rise, and for a little

little while at the end of about every four hours, till dark. In the mild weather of winter, they may be found at their labours through the whole of the day; and it is only when the frost sets in so hard as to render the ground altogether impermeable, that they are compelled either to discontinue their operations entirely, or to proceed in them at such depths as to be beyond the reach of our discovery. During the winter months, they generally get into warm and sheltered situations, such as under thick and shady hedge-rows, or into gardens which have fruit-walls. Gardeners, consequently, often catch them in the months of December, January, and February. Previously to any great change of the weather, such as heavy rain or storms, the Moles are said always to work particularly hard. In summer time, if the season happens to be a dry one, they repair to the borders of ditches, the banks of rivers, or places contiguous to hedges, for moisture, and for a necessary protection against the heat.

The fore-feet of the Mole, from their size and enormous strength, as well as their oblique position outwards, are, as before observed, peculiarly fitted to aid all the subterraneous labours of the animal. By means of these, in forming its galleries or runs, it scrapes the earth towards each side, till the quantity becomes too great for it to proceed onward with ease. It then works to the surface; and by pushing with its head, and its nervous paws,

paws, gradually raises out of its way the mould which incommodes it. To this process is owing those small hillocks so common in our fields. After thus getting rid of the earth, the animal proceeds in its labour as before; and a person may easily discover how many Moles are contained in a certain space of ground, by counting the newly raised mole-hills which have no connexion with each other. The hills made by a single Mole are often from three to nine or ten in number, according to the age, strength, or sex of the animal. Those of the males are generally the largest and most numerous of any. If the gallery happen, by any chance, to be stopped up or interrupted, the Mole seldom fails to re-establish the communication, by forming a vault of earth, or a kind of oblong mole-hill, to reunite the extremities.

These animals sometimes do incredible damage in gardens and meadows. M. de Buffon informs us, that, of the acorns which he planted on sixteen acres of land, the greater part of them were, in a very short time, carried away by the Moles. He consequently set his servants to work, and in less than three weeks they destroyed thirteen hundred of them.

Moles are able to swim over brooks and narrow streams of water, without any difficulty; and they are often observed by the mole-catchers in the act of crossing them. A person who has paid attention to these animals for many years, informs me, that
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he has more than once known them to have an outlet from a hole, on one side of a ditch, and an opening to another in the bank opposite. He says, that they swim with great ease and quickness. This person once tried to drown a Mole; and with that intention kept it swimming about for more than half an-hour. He was at last necessitated to hold it for some time under the water, in order to destroy it. In the Linnean Transactions, a Mole is mentioned as crossing a piece of water, near a hundred and eighty yards in width, in order to arrive at a small island which stood at that distance from the bank. This was in the loch of Clunie, in Scotland, the property of Lord Airly.

When these animals are seized, after being dug out of the ground, they generally utter a shrill scream, which has been compared to that of a child. They also exert their teeth and claws to effect, if possible, their escape. The former are very sharp; and when once their hold is fixed, it is no easy matter to loose them again. Moles are sometimes so ferocious as to attack and devour each other, particularly when, in the cold weather of winter, their customary food becomes scarce. At this season of the year, the animals caught in the traps are often half devoured before the mole-catcher can arrive to take them out.

The Moles begin to couple in the month of March, and about this time it is that they are often to be found in great numbers. A mole-catcher informed

informed me, that he caught in one hole, and by a single trap, no fewer than twenty-five in the course of three weeks.

The animals soon afterwards begin to prepare the habitation for their offspring. This is always formed in a dry situation, out of the reach of inundations, and is usually sheltered by a hedge or bush. It is a kind of arched apartment, from a foot to a foot and half or two feet in diameter at the bottom, having the sides and roof well and firmly compacted. The nest is made of leaves and grass. It is sometimes so large that the materials would fill a gallon measure, and occasionally so small that they scarcely cover the ground. The hillock, under which this nest is deposited, is easily distinguishable, by its being generally five or six times as large as any of the rest. Connected with the apartment in which the young Moles are laid, there are generally several galleries, that extend to the distance of some feet, like rays from a centre. Into these the mother makes her excursions for food, to supply herself and her offspring. And it is said that the instant she hears her habitation attacked by the mole-catcher from above, she takes to one of the burrows; and if the litter have attained sufficient strength to walk, the dam and her brood generally make good their retreat. The young, which are usually from three to five in number, are perfectly naked when first produced; and at that time they are said to have much the appearance of
young

young Rats. M. de Buffon was of opinion that Moles bring forth more than once in the year; at least, he says, it is certain that young ones are to be met with at different times from April to August. This, however, may arise from the period of their production being uncertain; or, as in a few other animals, the Moles may, perhaps, produce a second litter, where the first has by some accident been destroyed.

The skins of Moles were in former times held in considerable estimation. They were used for the linings of winter garments, made into covers for beds, and into hats. In England they seem at present to be thought of little value.

Persons who earn their subsistence by destroying Moles, make their chief attacks in the spring of the year, and particularly about the month of March, when the animals are much more active than at any other season. They are in the fields before sunrise; for about that time, the earth and grass may be frequently seen to move in the places where Moles are at work. When this is the case, the mole-catcher has nothing more to do than cut off the retreat, by striking a spade into the ground immediately behind, and then to dig them up.

Where a fresh mole-hill is observed by itself, and appears to have no communication with any other, (which is always the case when a Mole has worked from the surface downwards,) it should be turned up with a spade, and a quantity of water should

should be poured over the mouth of the passage. This will compel the animal, which can be at no great distance, to come forth, when it may be easily caught with the hand. It is easy to discover whether a hill, apparently of this kind, has communication with any other. The mole-catcher lies down and applies his ear to it, and at the same time coughs and makes a loud noise. If it has no communication, the terrified animal may be heard by its motion in the ground. In this case, either water may be poured into the hole, or the earth turned up with the spade, till the Mole is found.

With respect to catching the animals in subterraneous traps, it is an important circumstance to discover which are their most frequented, and which their bye roads. This is effected by making a mark on every new mole-hill, by a light pressure of the foot; and the next morning observing whether a Mole has passed that way, and obliterated the foot-mark. This must be done for two or three successive days. These foot-marks should not be deeply impressed; lest the animal be alarmed on his return, and thus form a new branch of road rather than open the obstructed one. The traps are then to be set in the frequented streets, so as to fit nicely the divided canal. These consist of a hollow semi-cylinder of wood, with grooved rings at each end, in which are placed nooses of horse-hair, fastened loosely by a peg in the centre, and stretched above the surface of the ground by a bent stick.

stick. When the Mole has passed half-way through one of the nooses, and in his progression removes the central peg, the bent stick rises by its elasticity, and strangles him*.

Many of the common people believe that the Mole is both blind and deaf, since its eyes and ears are so extremely minute, and so closely covered with fur, as not easily to be perceptible. Had either of these organs been of much larger size, they would have been perpetually liable to injury in the ground, by the earth falling into them. The eyes, however, have every property that is necessary towards distinct vision; a very small degree of which must be sufficient for an animal destined to live beneath the surface of the earth. The ears terminate externally in minute auditory holes; yet such is the animal's quickness of hearing, that it takes alarm, and seeks for safety in flight, at the most distant approach of danger.

There have been discovered in Great Britain three varieties of the Common Mole, distinguishable by their different colour:

The White Mole, the Spotted or Variegated Mole, and the Tawny or Cream-coloured Mole.

* See Animal Biography, i. p. 398—400.

In Wales this animal is called *twrch-daeaf* : in France, *taupe* : in Spain, *topo* : in Italy, *talpa* : in Portugal, *toupeira* : in Germany, *muhlwerf*, *maulwerf* : in Holland, *mol* : in Austria, *scheer*, *scheermaus* : in Hungary, *wa-kondok* : in Sweden, *mullvad*, *surk* : in Denmark, *muldwarp* : in Poland, *kret* : in Russia, *krot*, *zempla naja*, *sosé dka* or *susé dka*.

OF SHREWS IN GENERAL.

THESE animals are nearly allied both to the Moles and Mice. Like the former, they have a cartilaginous moveable snout, formed by an elongation of the parts surrounding the upper jaw, of use for rooting up the ground in search of food. But they differ from them in having their anterior feet resembling the posterior ones, instead of being broad and palmated. Their eyes, though very small, are easily discernible. In the general appearance of their head, therefore, and also in many of their habits of life, they resemble the Moles; but in the structure, though not the arrangement of their teeth, in the general form of their bodies, and particularly in that of their feet, they exhibit a close alliance to the Murine quadrupeds.

All the Shrews burrow, with great ease, into the ground, where, for the most part, they live out of the sight of men, and sheltered from the observation of such animals as otherwise would destroy them in great numbers. Their habitations are generally not far distant from the banks of rivers or other streams; and many of the species are able to swim with great agility. They feed, for the most part, on worms, and the larva of such insects as they meet with in their progress through the ground.

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Their voice is somewhat shrill. The effluvium from their bodies is, in general, fetid and unpleasant.

The females produce from four to six young ones at a litter.

THE FETID SHREW*.

SHREW. SHREW-MOUSE. SHROVE-MOUSE, OR HARDY-SHREW.

THE Fetid Shrew resides in a little burrow which it forms under the surface of the ground. Sometimes, however, it saves itself the labour of contriving an habitation, by adopting one (of larger dimensions, indeed, than it has need of) which has been abandoned by a Mole. It occasionally has a concealment under the moss that grows round the bottom of large trees; or amongst the matted leaves and moss in old and thick hedge-rows. Not unfrequently it is to be observed about hay-ricks and dung-hills; and in the most filthy of the latter

* *Sorex araneus*.—*Linnaeus*. *La Musaraigne*.—*Buffon*.

For the description of the Fetid Shrew, see the Synopsis, p. 36, No. 20.



H. Hoyle del.

Fetid Shrew.

Pub. by W. Burton & Thos. Agnew & Sons, 1868.

Size, 2 1/2 inches.

Length to the tail 2 1/2 inches.



it will root with its snout; like the Hog, for food. It is generally considered to live on corn, worms, insects, and the larva of insects, the latter of which it finds in abundance in decayed dung. It runs more slowly than the Common Mouse; and on this account is easily overtaken, when pursued on open ground. Its voice is a kind of shrill chirp or whistle, not unlike that of some species of grasshopper.

The odour of these Shrews is musky, and so very disagreeable, that although Cats are often known to destroy them in great numbers, they will never eat the bodies. To this nauseous smell, and well-known aversion, is probably owing the ridiculous notion, prevalent among the common people of most parts of Great Britain, that the Fetid Shrew is a venomous animal; and that, in particular, its bite is hurtful to Horses. When a Horse, in the field, happened to be suddenly seized with any thing like a numbness in his limbs, he was immediately judged, by the *old* farriers, to be either *planet-struck* or *shrew-run*. The mode of cure which they prescribed, and which they considered as in all cases infallible, was to drag the animal through a piece of a bramble that grew at both ends. Had any of these sages in horse-medicine taken the trouble to have examined the mouth of a Shrew, they would have found it so small as by no means to be capable of admitting double the thickness of any part of a

Horse's skin, which is certainly necessary before the animal can inflict a bite.

The females are supposed to breed more than once in the year; and to produce, in general, four or five young ones at a birth. Spring and summer are the usual times in which the young have been found. Mr. Pennant mentions a fact relative to the Fetid Shrews, which I have never remarked, and which, on enquiry, I cannot find to have been remarked by any of my acquaintance, (but which may, nevertheless, have been correctly ascertained by him,) that there is an annual mortality in these animals, great numbers of them being found dead in the paths, every August, without any apparent cause.

The Fetid Shrew is one of the most common of the British quadrupeds.

In Wales this Shrew is called *llygoden goch*, *chwistlen*, *llyg*: in France, *musaraigne*: in Italy, *toporagno*: in Spain and Portugal, *murganho*, *muferhano*: in Germany, *müger*, *spigmus*, *zismus*, *spitzmaus*, *haselmaus*: in Holland, *spitzmuis*: in Switzerland, *mürer*: in Savoy, *muset*, *musette*: in Hungary, *patkaanj*: in Sweden, *nabbmus*: in Denmark, *angelmuus*, *næbmuus*, *muuseskier*: in Norway, *nebbermuus*, *museskier*: in Lapland, *zibac*.





Howitt

Long-Tailed Field Mouse.

THE WATER SHREW*.

WATER MOLE, OR LAVELLAN.

THE Water Shrew is an inhabitant of some parts of France, Germany, Prussia, and Great Britain. In France it was unknown till the year 1756, when it was first observed and described by the justly celebrated Daubenton. It has been long recognized as a native of England; but it is by no means a common animal. It is occasionally met with in the counties of Lincoln, Cumberland, and Lancaster. I have found it in the parish of Christchurch, Hants; and Dr. Maton informs me, that he has seen it in the vicinity of the river Avon, at Alderbury, near Salisbury.

This Shrew inhabits the banks of ditches, streams, and rivers; and seems, says Mr. Pennant, to be the same animal which the inhabitants of Sutherland call the *Water Mole*, and those of Cathness, *Lavellan*†. By the latter it is held in great abhor-

* *Sorex fodiens*.—*Linnaeus*. *La Musaraigne d'Eau*.—*Buffon*.

For the description of the Water Shrew, see the Synopsis, p. 37, No. 21.

† Penn. Brit. Zool. i. p. 127.

rence, from a belief that it sometimes poisons cattle.

It burrows into the banks, and is seldom to be seen out of its hole at any time, except in the evenings. It swims with great facility both on the surface of the water, and submersed in it. Its voice resembles the chirp of a grasshopper.

The female usually produces her offspring in the early part of the summer; and brings about eight young ones at a litter.

In the gall-vessel of one of these animals, M. Daubenton discovered a considerable quantity of worms, which, he informs us, were of a kind somewhat similar to the *fasciolæ*, or fluke-worms, found in the livers of sheep and some other animals*.

* Note by Latreille, in Buff. Sonn. xxv. p. 253, n.





The Water Shrew.

H. Hoyle del.

Publ. by W. Dutton & J. Harvey, Sept. 1st 1868.

*Eliz. Byrne sculp.
Length to the tail 3 1/2 Inches.*

THE FRINGE-TAILED WATER SHREW*.

IN most of their habits and economy, there can be no doubt that the animals of the present species resemble those of the last. A single individual only, has, however, been hitherto discovered ; and this was caught by W. J. Hooker, Esq. in the month of June, 1803, in a ditch near Norwich, where he remarked that it swam and dived with as much facility as a Water Rat. The stuffed skin is now in the possession of Mr. Hooker.

* *Sorex ciliatus*.—Sowerby.

For the description of this Shrew, see the Synopsis, p. 38, No. 22.

OF URCHINS IN GENERAL.

URCHINS are animals usually of small size. They feed, for the most part, on roots, worms, and the larva of insects, which they dig up out of the earth, by means of their muzzle or snout. None of the species are carnivorous. They are never guilty of commencing an attack on other animals; nor, generally speaking, have they much cause to fear the result of any attack from them. In their own defence, they do not exert either their teeth or claws. On the first alarm, they roll themselves closely up into a ball, which presents on all sides a multitude of spines, so sharp and strong that few animals have the power of doing them the slightest injury. They continue in this passive state till their adversary has retired, when they leisurely unfold themselves, and proceed in their usual employments.

Of the complicated and very curious organization of the muscles, by which this singular mode of defence takes place, the following is the abridged description of M. Cuvier, professor of anatomy in Paris:

“ It is necessary, (he says,) in the first place, to observe, that these muscles, being attached to the skin, change their situation with it, and that they
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are therefore fixed with respect to their points of attachment only. We must then suppose the animal placed in certain positions, in order that the parts described may be more easily found.

“ Let us suppose the Urchin rolled up, as in the position the animal assumes for defence. All the body is then enveloped under the skin, by an oval-shaped sac, composed of fleshy and concentric fibres. These fibres adhere closely to the skin, and even to the root of the spines which cover it, and it is difficult to detach them with instruments. The fleshy purse they form is thickest at the margin of its aperture, which corresponds to the belly, at which place they form a kind of *sphincter*, or muscle, with orbicular fibres.

“ When the body of the Urchin is elongated, as in standing or running, the figure of this muscle is completely changed. It is situated on the animal's back, where it forms an oval, the middle part of which is very thin, but the circular margin considerably thicker, and more elevated. Several accessory muscles arise from the different points of the margin.

“ Towards the head, or at the anterior extremity of the oval, we observe two pairs of accessory muscles; one has its origin in the middle line, and is inserted into the bones of the nose; the other, which arises more externally, appears to be confounded with the exterior orbicular fibres, and is inserted anteriorly into the lateral parts of the nose
and

and *intermaxillary bones*. Another pair of muscles arises from the posterior extremity of the oval. They are of a broad pyramidal form, and are likewise continued with the external orbicular fibres. The tendinous point of each is inserted laterally near the end of the tail. There are also two other *sub-cutaneous muscles*, situated towards the belly, or below the great orbicular muscle.

“ When the skin of the belly is removed, we readily perceive three distinct portions of fleshy fibres. The first is situated under the throat, and corresponds to the *cutaneus colli*. It comes from the top of the breast, under the skin, and is inserted on the lateral parts of the head, near the ears. The portion of one side unites to its correspondent by a middle line, which is composed of fat. The second comes from the middle line of the *sternum*; it takes an oblique direction, becoming thicker and narrower above the shoulders, as it proceeds to join the edge of the great orbicular muscle. The third *ventral portion*, which is still more slender than the two former, extends over the whole surface of the *abdomen*; it arises from the circumference of the arms, from the lateral parts of the tail, and from the tops of the thighs: upon reaching the ribs it divides. The internal portion, which is the broader of the two, passes under the arm-pit, and is inserted into the upper part of the *os humeri*. The external portion is prolonged

prolonged laterally, and unites with the great orbicular *cutaneus*, towards the neck.

“ These are the muscles of the superficial layer: there are still some others, which are appendices of the former, and are situated under the muscles of the back. One arises from the head, where it is attached, on both sides, to the posterior edge of the external *meatus auditorius*. It is lost posteriorly in the anterior point of the orbicular muscle. Another small bundle of fleshy fibres arises from the last *cervical processes*, and is lost in the *cutaneus* of the back. Lastly, below the great orbicular muscle, we observe some transverse fibres, which form a very thin layer. The anterior are attached to the internal and upper part of the *humerus*: the posterior, to the external bundle of the third *ventral portion*.

“ Let us now consider the use of these muscles.

“ The animal, when rolled up like a ball, is enveloped by the orbicular muscle. To preserve this position, it is sufficient to contract the marginal fibres, which are very strong, and which, in closing the purse so as to cover the belly, have the effect of a *sphincter*. When the animal wishes to return to its ordinary posture, it unrolls itself thus: The middle fibres of the oval contract; the external fibres at first relax, and leave the belly and the feet free; all the circular fibres then contract together, and gather up towards the back. By this general contraction the accessory muscles are rendered

dered fixed, and capable of contracting. The anterior move the head upward, and extend it towards the back. The posterior raise the tail. Those of the deep-seated layer elevate the head and neck. The animal is then enabled to walk.

“If the approach of danger induce the Urchin to roll itself up, it accomplishes this in the following manner:

“The *orbicular cutaneus* relaxes, and the muscles of the head and neck elongate the oval; the deep transverse fibres attached to the external portion of the *ventral cutaneus*, render it broader. Every thing now yields to the impulse: the *flexors*, and the *cutaneus* of the neck and breast, draw the head towards the belly: the *cutaneus*, and the muscles of the abdomen, bring the tail and thighs towards the head; the flexors of the limbs contract; the great orbicular muscle then descends on the ribs, contracts obliquely, and thus, assuming the shape of a purse, retains the animal in a globular form*.”

The Hedgehog is the only animal of the present tribe that is an inhabitant of Europe. The other six species are all natives of hot climates. Most of them have a fetid and unpleasant smell.

* Cuvier's Lectures on Comparative Anatomy, ii. p. 576—581.





Hedge Hog.

Pub. by W. Darton & J. Harvey, Sept. 5th 1843

Length to the tail 10 Inches.

THE HEDGEHOG*.

URCHIN.

HEDGEHOGS usually reside in thickets, hedges, or the bottoms of dry ditches, where they can find shelter and concealment under bushes and fern. By far the greatest part of their time is passed in sleep. As soon as they awake, which is always in the evening, or during the night, they issue from their holes in search of food. This consists of worms, snails, insects and their larvæ, and various kinds of roots and herbs†. In the day time they are very seldom to be seen abroad.

These most harmless of all animals, have unjustly been accused of sucking the teats of Sheep and Cows; and likewise of ascending trees for the purpose of carrying off fruit on the points of their prickles. With respect to the former accusation, it is to be remarked, that their mouths are much too small to admit of their seizing the teats of

* *Erinaceus Europeus*.—*Linnaeus*. *Le Hérisson*.—*Buffon*.

For the description of the Hedgehog, see the Synopsis, p. 38, No. 23.

† In confinement, they will devour flesh-meat, either raw or cooked.

Cows; and although the accusation is generally believed by the common people to be founded in truth, yet I could never hear of any person who would pretend that he had himself been witness of the fact. As to the latter, I can only state, that several persons have at different times kept Hedgehogs, for a considerable while together, in their gardens, and yet have never seen them either attempt to climb into the fruit-trees, or to stick even the fallen fruit upon their spines.

When (as I have stated generally in the account of the Urchin tribe,) this animal is attacked or alarmed, it adopts a very singular mode of defence. It puts its head under the breast, draws together its four legs, and forms itself into a kind of oblong ball, which presents only sharp spines on every side. Whilst thus folded together, the contraction of the muscles is so powerful, that it would be almost as easy to tear a Hedgehog in pieces, as, by force, to pull it open. It has been remarked, that, when the feet of this animal are pinched, it usually utters a shrill scream. But the barbarity of anatomists has proved, that Hedgehogs may sometimes be even dissected alive, without their emitting any sounds of distress whatever.

At the commencement of winter, the Hedgehogs form a deep and warm *hybernaculum*, chiefly of moss, dried leaves, and grass. Into this they retire as soon as the cold weather sets in; and they here remain, in a torpid state, till the ensuing spring.

The

The animals are said to be so encircled with their nest, as sometimes to resemble balls of dried leaves. When taken out, and placed at a little distance from the fire, they soon recover from their torpidity. It is supposed that they do not lay up any store of food for the winter, like some other quadrupeds, but that they sleep during the whole time of their retirement.

That these animals may be rendered tame and docile, there are innumerable proofs. With the Calmuc Tartars they are held in great esteem, being kept in their huts, instead of Cats, for the purpose of driving away vermin. Their smell, however, is in general so disgusting and powerful, as in habitable apartments oftentimes to be found exceedingly unpleasant.

In the month of June, 1781, four young hedgehogs, with their mother, were brought to M. de Buffon. From their quills being perfectly formed, he considered them as some weeks old. He put them into a large wire cage, where he had previously formed for them a bed of leaves. For the first two days the only food he gave them was some pieces of boiled beef, of which they sucked the juicy parts, but in other respects left the meat entire. On the third day he put into their cage several kinds of plants, such as groundsel, bindweed, &c. but they did not touch any of them. Notwithstanding this apparently slender nourishment, the mother did not seem at all weakened, and often gave suck to
the

her litter. On the following days he gave them cherries, bread, and bullock's liver. Both the mother and her young ones sucked the latter very greedily: they likewise ate a small part of the bread, but would not touch the fruit. The juices which they drew from the meat seem to have rendered it unnecessary to give them any water; and consequently, although they were allowed none during the whole time that M. de Buffon kept them, yet they were always fat, and apparently in good health. The legs of the mother were so very short, that when the young ones were inclined to suck, she could not conveniently admit them under her body as she stood, but was obliged to lie down on one side, in order that they might take their food with less difficulty.

M. de Buffon was inclined to try how far the mother was really attached to her offspring; and for that purpose he one day opened the door of the cage whilst all the young ones were asleep. As soon as she perceived that the way was clear, she walked out, went to the furthest part of the garden, and would have left them to perish, had she not been carried back*.

In the summer of 1769, the Reverend Mr. White, of Selborne, procured a litter of young Hedgehogs, apparently five or six days old. These were all

* Buffon par Sonnini, xxv. p. 237.

blind when they were brought. He observes, that at their birth, the spines of Hedgehogs must doubtless be soft and flexible, or else the dam must have but a bad time in parturition. But it is plain that they must soon harden; for these young ones had such stiff prickles on their backs and sides, as would have fetched blood, had the animals not been handled with caution. The spines at this age are perfectly white; and the animals have little hanging ears, which Mr. White says he did not recollect to be observable in old Hedgehogs. At this early age they could, in part, draw their skin down over their faces; but they were not able to contract themselves into a ball, from the muscles not having arrived at their full tone and firmness*.

Hedgehogs live in pairs; and the females produce their young ones, usually four or five in number, some time in the spring of the year. The nest is large, and composed principally of moss.

The flesh of the Hedgehog is occasionally used as food, and is said to be very delicate eating. The skin was sometimes employed by the ancients, in the place of a brush, for the cleaning of clothes. In some parts of the continent it is customary for

* White's Works in Natural History, i. p. 131, 132.

the farmers to put the skin of a Hedgehog on the muzzle of a Calf which they are about to wean, in order that the Cow may not permit it to suck.

“As a curious example, (observes Dr. Shaw,) of the absurdities which sometimes occur in the works of the older writers, we may remark, that, according to Albertus Magnus, the right eye of a Hedgehog, fried in oil, and kept in a brass vessel, imparts all its virtues to the oil, which, used as a collyrium, or ointment, for the eyes, produces such a clearness of vision as to enable a person to see as well by night as by day!! And Pliny affirms, that its gall, mixed with the brain of a Bat, is a good depilatory, or application, for the removing of superfluous hair*!”

Hedgehogs are by no means uncommon animals in any of the cultivated districts either of Great Britain or Ireland.

This animal is called *draenog*, and *draen y coed*, in Wales: in France, *hérisson*: in Italy, *riccio*, *erinaceo*, *aizzo*: in Spain, *erizo*: in Portugal, *ourizo*,

* Shaw's General Zoology, i. p. 576.

orico cachero: in Germany, *igel*: in Holland, *egel*, *eegel-varken*, *yzervarchen*, *yseren verchen*: in Sweden, *igelkot*: in Denmark, *pind-swin*: in Poland, *jez*, *zænnay*: in Norway, *bustivil*: in Russia, *iefti*.

END OF PART I.

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BRITISH QUADRUPEDS.

PART II.

BRITISH OVERSEAS

PART II

GLIRES.

 OF MURINE QUADRUPEDS IN
GENERAL.

NEARLY all the animals of the present tribe are, in some measure, injurious to the labours of mankind, in every country where they are found. The inhabitants of Great Britain are very little annoyed by them, comparatively with those of several of the countries both of Europe and Asia; since out of about fifty species, in the whole, there are only seven that are natives of our islands. In many parts of Russia and Siberia, they collect together in numbers almost beyond conception, and wander in immense troops from place to place, carrying devastation through their whole progress. Most of the species reside in burrows which they dig in the ground, among the chinks of rocks, under stones, or in the holes of walls or other buildings. In these retreats they remain concealed during the day time, and only emerge at night in pursuit of food. This consists, for the most part,

of vegetables. Many of the animals, however, are *omnivorous*, and devour, with avidity, almost every kind of substance, animal or vegetable, that lies in their way. They are, in general, well adapted for climbing trees, rocks, or walls; and some of them are able to swim with great agility.

All the species are prolific. The females have from eight to twelve teats; and generally produce, (more than once in the year,) from six to fourteen young ones at a litter.

THE NORWAY OR BROWN RAT*.

ALTHOUGH this Rat is popularly known by the name of Norway Rat, it is, in fact, a native of Persia and India, from whence it was originally introduced into Europe. It first appeared in England in the beginning of the last century; and it did not reach the neighbourhood of Paris till towards the year 1750. Professor Pallas assures us, that these Rats, now very common in all parts of Russia and Siberia, were not at all known at Jaïk, in 1766. It was in the summer of that year,

* *Mus decumanus*.—Linnaeus. *Le Surmulot*.—Buffon.

For the description of this Rat see the Synopsis, p. 40, No. 24.



Brown or Norway Rat.

Pub. by W. Dutton & T. Horsey Sept. 2nd 1808.

*Rice Byrne sculp.
Length to the tail 9 Inches.*



which happened to be very hot and dry, that they one evening arrived, in immense multitudes, from the heaths of the river Samara, to the environs of Jaïtzkoï-gorodok, the capital of the Cossacs of Jaïk. The inhabitants say, that part of the animals entered the town by climbing over the ramparts, and that others passed through one of the gates. Since this period, they have proved themselves a serious scourge to the people; but what is peculiarly deserving of remark is, that by far the greater part of the Rats continue to reside only on the eastern side of the principal street of the town. This writer likewise informs us, that Serepta, a town situated on the bank of the Volga, a few years before his arrival there, (in 1793,) was suddenly infested by vast multitudes of Brown Rats. The animals, however, after swimming over the mill-dam, in open day, continued their route towards Tzaritzin!

There were no Rats in North America till they were transported thither by the European settlers; but their numbers are now increased so as to become a serious pest to the colonies. The depredations which they commit in the plantations are occasionally very great indeed.

The Brown Rats, wherever they have taken up their residence amongst us, have entirely extirpated the formerly common kinds; and in Ireland it is said that they have very nearly destroyed even the whole race of frogs. Few animals are, indeed,

in every respect, so voracious and destructive as these. They not only devour in the fields young Rabbits, Hares, and various kinds of winged game, but they often get into hen-roosts, where, like the Polecat, they generally destroy many more than they are able to eat. They likewise gnaw in pieces, clothes, furniture, paper, and leather; in short, nothing seems to come amiss to them. Instances have occurred of their even attacking Pigs that have been put up to fatten: they have sometimes overcome these, and eaten through their thick and tough hide, into the body. When other provisions fall short, they are often known to devour their own species; and it is to this propensity that we are chiefly indebted for the number of the animals being kept within any tolerable bounds.

It is not, perhaps, generally known that the Norway Rats will devour fruit, and particularly apples, with great avidity. In the travels of Sonnini into Greece, a somewhat singular instance of this propensity is related. Whilst his ship was at anchor in the harbour of Rhodes, it was full of these destructive animals. A Greek bark, laden with apples, cast anchor at a little distance from the vessel. The French sailors, without making any noise, affixed to her, during the night, a hawser, which they drew tight, in order to serve as a bridge by which the Rats might pass into the bark. The animals passed along the rope, without the exception

ception of a single one, and thus entirely cleared the ship*.

A large Rat is an exceedingly strong and powerful animal; and it sometimes requires great courage and strength in a Cat to oppose and defeat one of them. The Weesel, though smaller, is a more dangerous enemy than the Cat, because it can follow the Rats into their closest retreats. The combat between these two creatures is often sharp and long. Their manner of fighting is very different; and this gives the Weesel much the advantage. The Rat can only wound by snatches, and with his fore-teeth, which are more calculated for gnawing than biting; whereas the Weesel bites fiercely with its whole jaw, and instead of afterwards letting go, like the Rat, it continues its hold, and sucks the blood through the wound, till the Rat sinks exhausted under its gripe.

The males are said generally to be much larger, more strong and mischievous, than the females. When closely pursued, they have sometimes courage to turn upon the assailant, and seize the stick or hand of the person who attempts to strike them. Their bite is by many people thought to be poisonous. M. de Buffon says, that it is generally followed by a painful swelling, and that the wound, though small, does not soon heal.

* Sonnini's Travels in Greece and Turkey, i. p. 140.

During the summer, the animals, for the most part, leave their habitations about buildings, to reside in holes in the neighbourhood of rivers, ditches, and ponds. In these places Dogs will chase them with the same eagerness that they do the Water Rat. When thus pursued, the Rats can equally take to the water, or shelter themselves amongst the close and thorny bottoms of hedges and thickets. They even prefer the former, plunging in without dread, and swimming or diving with the greatest facility. It is from this circumstance that the real Water Rats are, by many persons, believed to frequent barns and outhouses during the winter season, and to commit their depredations like the Brown and the Black Rats. About the month of November, but sooner or later according to the season, the females and young ones of the present species quit the fields, and proceed, sometimes in troops, to the outhouses. The old males are said still to remain in the fields, each in his hole, where he has accumulated acorns, beech-mast, and other provisions, to serve him during the cold season. They do not become torpid in winter; but, in fine days, are often observed to venture abroad out of their holes.

The females produce young ones generally more than twice in the year; and at each litter they have as many as from ten to twenty in number. M. de Buffon informs us, that when these animals were
first

first seen in France, he received some females that were with young. He kept them in cages for two or three days; and before they brought forth, he observed that they gnawed into minute pieces the interior wooden part of the cages, and put the fragments together as beds for their little ones.

The inhabitants of California, and some other foreign countries, eat the flesh of Rats, and consider it a palatable and excellent food. Some of the Japanese tame these animals, and teach them to perform many entertaining tricks; and, thus instructed, they are exhibited as a show for the diversion of the people*.

We are informed, in the Statistical Account of Scotland, that *white Rats* are often seen in the Highlands during the winter months†.

In France the Brown Rats are sometimes called *rats de bois*; but, as in England, they are generally confounded with the ensuing species.

* Kaempfer's Japan, i. p. 126.

† Sinclair' Statistical Account of Scotland, i. p. 487.

THE COMMON OR BLACK RAT*.

THE present species, like the former, is believed to have been originally brought into Europe, though several centuries ago, from Persia or some parts of India. Its numbers, however, of late years, have been greatly diminished; and from some countries it has been almost extirpated, in consequence of the prevalence and superior strength of the Norway Rats.

In their general manners and habits of life there is a near alliance betwixt the two species; but the Black Rats, from their smaller size and inferior powers of body, are capable of by no means so much mischief as the others. By the change, therefore, of the Black for the Norway Rats, in this country, instead of deriving a benefit, we have, in many respects, been considerable sufferers.

What is a very remarkable circumstance in these Rats is, that they have a singular predisposition for the stone. M. Morand, of Paris, in minutely examining more than twenty Rats, observed, that

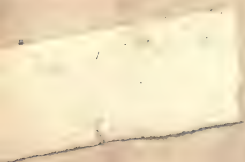
* *Mus Rattus*.—*Linnaeus*. *Le Rat*.—*Buffon*.

For the description of the Black Rat, see the Synopsis, p. 41, No. 25,



Black Rat.

Howitt



above half of them were attacked by this disease. He informs us that it is much more frequent in males than females ; and that almost all Rats, when they become old, have stones in their urinary passages, and swellings and ulcers in the kidneys. In one Rat, M. Morand found twelve stones, of which nine had become of the size of a coriander seed, and three were smaller. From others he took out stones of the size of a grain of wheat. The composition of these stones was very different from that of stones found in other animals. Instead of having, like those, a somewhat spherical nucleus, serving as a basis to concretions which are formed round it in an infinite number of extremely thin layers, the present had the same composition throughout. Their shape also was different, some of them being oval, and others cubical : and the cubical ones, it was remarked, had always a shining surface*.

Like the former species, the Black Rats breed frequently in the year ; and they commonly produce six or seven young ones at a litter. For these the females form a comfortable nest, of wool, bits of cloth, hay, or straw, in some dry and warm place, about barns or other outhouses. It is said that they do not suckle them long ; but that, as soon

* Letter of M. Morand, Medecin de la Faculté de Paris, inserted in *Melanges d'Histoire Naturelle*, i. p. 138.

as their stomachs will bear it, they are fed with more solid food. M. de Buffon informs us, that when the young ones first quit their holes, the dams watch, defend, and will even fight Cats to save them*.

The name by which the Black Rat is known in Wales, is *Ilygodyn fferngig*: in France, *Rat*: in Italy, *ratto di casa*: in Spain, *raton*, *rata*: in Portugal, *rato*: in Germany, *ratz*: in Holland, *rot*, *rotte*: in Sweden, *rotta*: in Denmark, *rotte*: in Poland, *sczurez*: in Hungary, *gasu*, *malomeger*: in Russia, *krysa*.

THE WATER RAT†.

IN its manners and disposition, the Water Rat somewhat resembles the Otter. Like that animal, it forms a lodgement in the bank of some river, ditch, or pond, and seeks its subsistence from the adjacent water. Its prey consists chiefly of small fish, frogs, and tad-poles; and where all these are

* Buffon, par Sonnini, xxv. p. 189.

† *Mus amphibius*.—Linnaeus. *Le Rat d'Eau*.—Buffon.

For the description of the Water Rat, see the Synopsis, p. 42, No. 26.



Arvicola *Arv.*

Water Rat.

Pub. by W. Darton & J. Harvey Sept. 2, 1808.

Ellis. Byrne sculp.

Length to the tail 7 Inches.



scarce, which indeed can seldom be the case in the places where it takes its residence, the Water Rat has recourse to aquatic plants for subsistence*.

This animal is never found about houses or barns; but it has sometimes been observed in meadows and gardens, feeding on the roots of herbs and shrubs. As a farmer of Selborne, in Hampshire, in the winter of 1769, was ploughing up a dry chalky field, far removed from any water, he turned out of the earth a Water Rat, that was curiously laid up in an *hybernaculum*, or winter's nest, neatly and compactly formed of grass and leaves. At one end of the burrow there was found more than a gallon of potatoes, all regularly stored, laid up, no doubt, for the support of the animal till the returning spring. The Rev. Mr. White, from whose writings this anecdote is taken, asks these questions: How came this amphibious animal to fix its winter station at such a distance from the water? Was it determined, in its choice of the place, by the accident of finding the potatoes which were planted there? Or is it the constant practice of the Water Rat to forsake the neighbourhood of water during the colder months†?

* Two or three Water Rats that I have opened, had their stomach entirely filled with a macerated vegetable substance.

† White's Works in Natural History, ii. p. 129.

Notwithstanding the circumstance of its toes being unconnected by webs, and thus differing from those of most other animals which seek their food in the water, this Rat not only swims on the surface, but under it, with singular facility. It is also able to continue, for a great length of time, submersed, without coming to the surface to breathe.

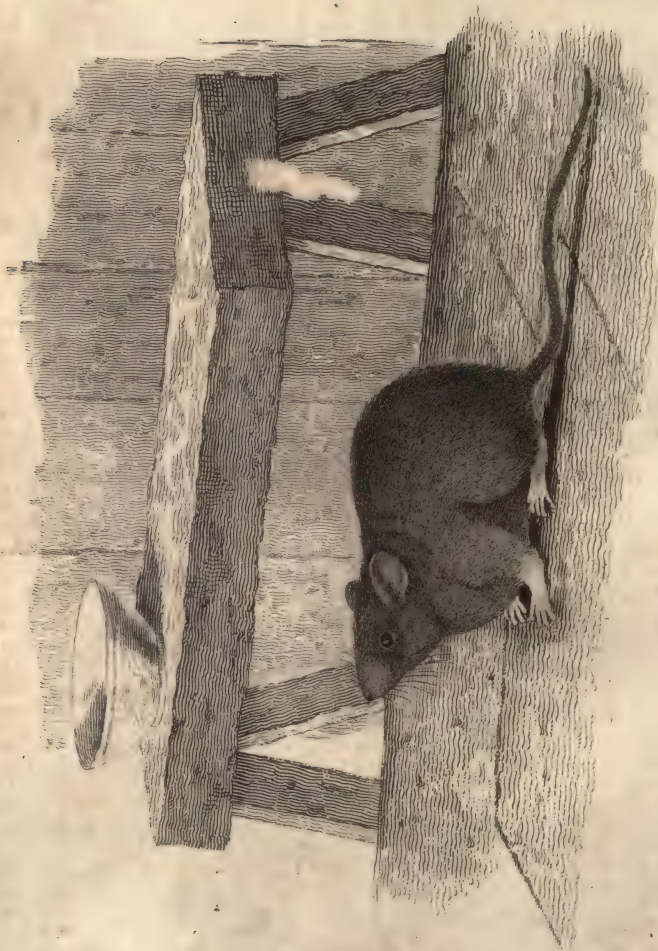
Its general enemies seem to be the larger and more voracious species of fish, and particularly the pike, in the stomach of which it has often been found. Dogs also pursue it with great eagerness. It is a savage animal; and, when laid hold of, will bite with great keenness and ferocity.

The females usually litter in the month of April, producing six or eight young ones at a birth. It is probable that they may procreate more than once in the year; but this has not yet been ascertained. At some particular seasons they have a strong musky odour.

The flesh of the Water Rats is held in high esteem by the inhabitants of several parts of the Russian empire, as an article of food; and in all Roman Catholic countries it is allowed to be eaten during lent.

This animal, in Wales, is called *llygoden y dwft*: in France, *rat d'eau*: in Italy, *sorgo morgange*: in Spain





Common Mouse.

H. Hoyle. del.

Pub. by W. Darton & J. Harvey, Sept. 17th 1808.

*Eliz. Byrne sculp.
Length to the tail 3½ Inches.*

Spain, *raton de agua*: in Portugal, *rato de agoa*: in Germany, *waffer musz*: in Holland, *water rot*: in Sweden, *watn-rotta*: in Denmark, *vand-rotte*: in Poland, *myss-wodna*: in Norway, *vas muus vands-kiaer*: in Russia, *wodjanoi krot*: in Hungary, *gaati-eger*.

THE COMMON MOUSE*.

THE Mouse is an inhabitant of almost every part of the world; and although there is some doubt whether it was originally a native of America, it is now become very common in that country, and is likewise at present found in most of the American islands.

Timid by nature, and familiar only from necessity, fear and want are the sole springs of its actions; and, consequently, it seldom leaves its hiding place but for the purpose of seeking food. It is entirely a domestic animal, and never to be found in fields, or in countries unfrequented by mankind.

* *Mus Musculus*.—Linnaeus. *La Souris*.—Buffon.

For the description of the Mouse, see the Synopsis, p. 43, No. 27.

It is a mischievous little creature, eating or gnawing almost every thing that comes in its way. Occasionally it is very frolicsome, squatting on its tail, and cleaning its face and fur with its paws; and then suddenly leaping up and gamboling about in the most pleasing antics. From the general neatness of its form, and the great degree of sprightliness and vivacity that is expressed in all its actions, it is certainly an interesting animal. When it first creeps out of its hole into a room where any person happens to be sitting, the least noise or motion will send it back, with precipitation, to its retreat. But if it is often suffered to enter without interruption, and particularly if food is placed for it on the floor, it by degrees attains confidence, and at length will venture to run about the room apparently without fear. Still, however, its timidity is so great, that, on the slightest recurrence of the noise, it is driven to its hole for shelter and security.

I recollect, that once, after having caught a Mouse in a wire trap, I set it before me on the table at which I was writing, in order that I might observe its motions. At first it was greatly alarmed, in its new and exposed situation; but when, in the course of a quarter of an hour, I presented it with a bit of sugar, the animal, without much hesitation, took it from my fingers, and, sitting nearly upright on its hind legs, and holding the sugar in its fore-feet, in a moment devoured it. I cut off part of its hair,
and

and set it at liberty. It is almost needless to say, that it never again visited its prison. This little anecdote proves, that, notwithstanding the naturally fearful disposition of these animals, their timidity is to be overcome by hunger.

From their weakness and small size, Mice have more enemies than Rats. They are preyed upon by Cats, Weesels, Rats, owls, and various other animals; and men, by means of traps, &c. destroy them in immense numbers. The root of white hellebore and staves-acre, powdered and mixed with meal, is a certain poison to them.

The fecundity of these animals is immense, since they breed several times in the year, and produce at each litter from six to ten young ones, which, in the course of fifteen days, become sufficiently strong to procure food for themselves.

A variety of the Common Mouse is sometimes observed of a milk-white colour, with red eyes. This is found not only in temperate climates, but in both the northern and southern parts of the two continents of Europe and America. In England it sometimes, but very rarely, occurs.

In Wales this little animal is called *llygoden*: in France, *souris*: in Italy, *topo*, *sorice*, *sorgio di casa*: in Spain, *rat*, *raton*: in Portugal, *ratinho*: in Ger-

T 3

many,

many, *musz*, *maus*: in Holland, *muis*, *huis-muis*: in Sweden, *mus*: in Denmark, *muus*, *lille muus*: in Poland, *myss*: in Hungary, *eger*: in Norway, *huus-muus*: in Russia, *mysch*, *domaschaaja mysch*.

THE LONG-TAILED FIELD MOUSE*.

FIELD MOUSE. FIELD RAT, OR WOOD MOUSE.

The Field Mice frequent dry and elevated grounds, particularly such as are woody, or covered with thickets. They are extremely common in all the temperate parts of Europe.

In some districts of France, and even in our own country, these animals, small as they are, have at times proved seriously destructive to the industry of the farmer; ravaging, and committing great depredations in his corn-fields, and particularly in such as are sown with beans or peas, of which they sometimes devour the greatest part of the seed. They likewise frequent meadows, woods, and gar-

* *Mus sylvaticus*.—*Linnaeus*. *Le Mulot*.—*Buffon*.

For the description of the Field Mouse, see the Synopsis, p. 44, No. 23

dens, where they feed on acorns, beech-mast, and nuts of different kinds.

“Their places of concealment (says M. de Buffon, whose account is so excellent, that I shall quote nearly the whole of it) are holes under brush-wood, or trunks of trees. They here amass such quantities of nuts and acorns, that a bushel of these has often been found contained in one of them; and this provision does not seem to be proportioned so much to the wants of the animals, as to the capacity of the places allotted for its reception. The holes are generally more than a foot underground, and often divided into two cells, the one for living in with their young, and the other as a granary.

“I have often witnessed the great damage done by these animals. They will run along the furrow of a plough, and taking up the newly-sown acorns, will convey them, one by one, to their holes; and in a nursery of trees they are more destructive than all the birds and other animals put together. The only method I could ever find to prevent this evil, was to set traps, at the distance of about every ten paces, through the whole extent of the newly sown ground. No other preparation is necessary than placing a roasted walnut under a flat stone, supported by a piece of stick, to which the walnut must be fastened. This bait they are very fond of, and will come eagerly to seize it; but no sooner do they begin to gnaw, than the stone falls upon and crushes them to death. When I first adopted

this method, I desired that all the animals caught in the traps might be brought to me; and I was greatly astonished when I found that more than a hundred were taken every day, in a piece of land consisting only of about forty acres. I obtained in this manner more than *two thousand*, in the course of twenty-three days, from the fifteenth of November to the eighth of December. Their numbers afterwards decreased gradually, till the hard frosts commenced, when the remaining animals retired to their holes, to feed upon what they had collected*."

In some parts of the continent, the multitudes of Field Mice have occasionally been so immense as to plunder whole districts, leaving scarcely any thing that was eatable, either in the gardens or fields. Muschenbroëk has related, that they were so numerous in Holland, in the year 1742, that one peasant killed in his fields betwixt five and six thousand. This scourge is the more terrible, since it frequently happens that every attention, and every imaginable stratagem, are insufficient to destroy them, till the violent rains set in, which often thin their numbers, by drowning them in thousands at a time. The rains, however, sometimes come too late for the farmer, and then, instead of the crops of corn which he had reasonably looked forward to, he has nothing to reap but a wreck of the straw.

* Buffon par Sonnini, xxv. p. 208, 209.

It is in the autumn that these Mice chiefly abound. In spring they are not so numerous; for whenever, in the winter, their provisions run short, the strong animals always attack and devour the weak ones. They are likewise destroyed, in great numbers, at all times of the year that they appear abroad, by hawks, owls, Foxes, and Weesels.

As a proof that, on the least scarcity of provisions, they will devour their own species, M. de Buffon informs us, that he once put a dozen Field Mice into a cage, and accustomed them to be regularly fed every morning at eight o'clock: but neglecting them one morning for about a quarter of an hour, one of them had been eaten by the others. Next day they devoured another; and in the course of a few days only one was left, all the rest having been killed, and in part eaten: even the one that survived had his legs and tail much mutilated*.

The increase of these animals is, if possible, more rapid than that of Rats. The females bring forth three or four times in the year; and seldom have fewer, though sometimes many more, than nine or ten young ones at a litter. A peasant, on the estate of M. de Buffon, once took twenty young ones out of a single nest. The females make a bed for their offspring, either in a tuft of grass, or

* Buffon par Sonnini, xxv. p. 210.

immediately below the surface of the ground, in a place nicely prepared for the purpose.

In Wales this species of Mouse is called *llygoden ganolig*, *llygoden y maes*: in France, *mulot*, *grand rat des champs*, *ratte a la grand queue*, *rat saute-relle*: in Denmark, *voed*.

THE HARVEST MOUSE*.

THIS Mouse, which is the smallest of all the British quadrupeds, seldom exceeds the sixth part of an ounce in weight. It was first discovered in Hampshire, by the late Rev. Mr. White of Selborne, about the year 1767; and it is not hitherto known to inhabit any part of the world, except some of the southern counties of England.

Like the Field Mouse, it does not enter dwelling-houses; but it is often carried in sheaves of corn, out of the field, into corn ricks: and, as the females produce their offspring in the autumn, it often happens that a hundred, or more, are found

* *Mus Messorius*.—Shaw.

The Harvest Mouse was unknown to Linnæus. For the description of it, see the Synopsis, p. 45, No. 29.



Harvest

Harvest Mouse.

Pub. by W. Dawson & J. Harvey Sept. 1868.

Length to the tail 2 1/2 Inches.



in a single rick, when pulled down to be housed. Those that are not thus carried away in the sheaves, shelter themselves, during winter, under the surface of the ground, in some deep burrow; at the bottom of which they form a warm and comfortable bed of grass, and other softer substances.

About the middle of September, 1804, I had a female Harvest Mouse given to me by Mrs. Campbell, of Chewton House, Hants. It had been put into a Dormouse cage, immediately when caught, and a few days afterwards produced eight young ones. I entertained some hopes that the little animal would have nursed these, and brought them up; but having been disturbed in her removal, about four miles, from the country, she began to destroy them, and I took them from her. The young ones, at the time I received them, (not more than two or three days old,) must have been at least equal in weight to the mother.

After they were removed, she soon became reconciled to her situation; and, when there was no noise, would venture to come out of her hiding place, at the extremity of the cage, and climb about among the wires of the open part, before me. In doing this, I remarked that her tail was, in some measure, *prehensile*; and that, to render her hold the more secure, she generally coiled the extremity of it round one of the wires. The toes of all the feet were particularly long and flexible, and she could grasp the wires very firmly with any of them.

them. She frequently rested on her hind-feet, somewhat in the manner of the Jerboa, for the purpose of looking about her; and in this attitude could extend her body, at such an angle as at first greatly surprised me. She was a beautiful little animal; and her various attitudes in cleaning her face, head, and body, with her paws, were peculiarly graceful and elegant.

For a few days after I received this Mouse, I neglected to give it any water; but when I afterwards put some into the cage, she lapped it with great eagerness. After lapping, she always raised herself on her hind feet, and cleaned her head with her paws. She continued, even till the time of her death, exceedingly shy and timid; but whenever I put into the cage any favourite food, such as grains of wheat or maize, she would eat them before me. On the least noise or motion, however, she immediately ran off, with the grain in her mouth, to her hiding place.

One evening, as I was sitting at my writing desk, and the animal was playing about in the open part of its cage, a large blue-fly happened to buzz against the wires. The little creature, although at twice or thrice the distance of her own length from it, sprang along the wires with the greatest agility, and would certainly have seized it, had the space betwixt the wires been sufficiently wide to have admitted her teeth or paws to reach it. I was surprised at this occurrence, as I had been led to believe

lieve that the Harvest Mouse was merely a granivorous animal. I caught the fly, and made it buzz in my fingers against the wires. The Mouse, though usually shy and timid, immediately came out of her hiding place, and running to the spot, seized and devoured it. From this time I fed her with insects, whenever I could get them; and she always preferred them to any other kind of food that I offered her.

When this Mouse was first put into her cage, a piece of fine flannel was folded up into the dark part of it, as a bed, and I put some grass and bran into the large open part. In the course of a few days all the grass was removed; and on examining the cage, I found it very neatly arranged betwixt the folds of the flannel, and rendered more soft by being mixed with the knap of the flannel, which the animal had torn off in considerable quantity for the purpose. The chief part of this operation must have taken place in the night; for although the Mouse was generally awake and active during the day time, yet I never once observed it employed in removing the grass.

On opening its nest, about the latter end of October, 1804, I remarked that there were, amongst the grass and wool at the bottom, about forty grains of maize. These appeared to have been arranged with some care and regularity; and every grain had the corcule, or growing part, eaten out, the lobes only being left. This seemed so much like an operation

operation induced by the instinctive propensity that some quadrupeds are endowed with, for storing up food for support during the winter months, that I soon afterwards put into the cage about a hundred additional grains of maize. These were all in a short time carried away; and on a second examination, I found them stored up in the manner of the former. But though the animal was well supplied with other food, and particularly with bread, which it seemed very fond of, and although it continued perfectly active through the whole winter, on examining its nest a third time, about the end of November, I observed that the food in its repository was all consumed, except about half a dozen grains.

This interesting little animal died in the month of December, 1806, after a confinement of two years and a quarter. I have some reason to believe that its death was occasioned by water being put into its cage, in a shell picked up on the sea shore, that had been much impregnated with salt.

School-boys, in various parts of Hampshire, keep these Mice in cages. They catch them when very young; and the animals then become so exceedingly tame as to allow themselves to be handled, without any symptoms of alarm. But those that are caught when full grown, generally continue shy and timid as long as they live. There is nothing unpleasant in the smell of these little creatures, as there is in most others of the murine tribe.

The

The Harvest Mice are observed to be most abundant about the month of September, when the young ones are large and strong enough to run about. The females build their nest amongst the straws of the corn, above the ground, and sometimes in thistles. This nest is round and compact, composed of blades of corn and grass, and is generally found to contain about eight young ones. One of the nests is thus described by Mr. White of Selborne. "It was most artificially platted, and composed of blades of wheat; perfectly round, and about the size of a cricket-ball; with the aperture so ingeniously closed, that there was no discovering to what part it belonged. It was so compact and well filled, that it would roll across the table without being discomposed, though it contained eight young Mice that were naked and blind. As this nest was perfectly full, how could the dam come at her litter respectively, so as to administer a teat to each? Perhaps she opens different places for that purpose, adjusting them again when the business is over; but she could not possibly be contained herself in the ball with her young, which, moreover, would be daily increasing in bulk. This wonderful procreant cradle, an elegant specimen of the efforts of instinct, was found in a wheat-field, suspended in the head of a thistle*."

* White's Works in Natural History, i. p. 59.

THE MEADOW MOUSE*.

SHORT-TAILED FIELD MOUSE.

IN their general manners, and in most of their habits of life, these animals, which are oftentimes found in too great abundance both in great Britain and Ireland, seem very nearly allied to the Field Mice. It has, however, been remarked, that they frequent moist, in preference to dry situations, and that they are seldom known to infest gardens. They dig holes in the earth, where they amass corn, nuts, and acorns; but corn is their most favourite food. Their holes, although they are generally less spacious, and not dug so deep in the ground, are similar to those of the Long-tailed Field Mice, and are usually divided into two compartments. Dr. Barry informs us, that the roads, or tracks, made by these animals amongst the moss, and short heath, in the Orkney Islands, are about three inches in breadth, and sometimes extend for several miles in length.

* *Mus arvalis*.—Linnaeus. *Le Campagnol*.—Buffon.

For the description of the Meadow Mouse, see the Synopsis, p. 46, No. 30.

Meadow Mouse.



Rowlett



He says that they are much worn by continual treading, and that they are warped into a thousand different directions*.

As soon as the corn begins to ripen, the Meadow Mice collect together from all quarters, and frequently commit great havoc, by cutting the stalks in order to come at the ears. When all the corn is carried out of the fields, and nothing more is left for them there, they generally resort to the newly sown lands; and, if the numbers happen to be great, their depredations will sometimes defeat all the hopes of the succeeding year. Many of them, like the Harvest Mice, are conveyed in the sheaves into corn-ricks and barns, where they occasionally do much damage. But those that are left in the fields, either retire into the woods, if there happen to be any in the neighbourhood, to feed on the fallen acorns and beech-mast, or retreat to their holes for the winter, and there live upon what food they have previously amassed together.

We are informed by M. de Buffon, that in France the Meadow Mice appear, in some years, in such amazing numbers, that, were they to continue undiminished for any great length of time, they would commit the most alarming devastations. When their proper food becomes scarce,

* Barry's History of the Orkney Islands, p. 316.

they, however, attack and devour their own species. It is said that Dogs will eat these Mice with great eagerness; but that Cats, though they often kill them, always reject them as food*.

The females form, for their young ones, a soft nest, of grass and other materials from the fields, generally in moist meadows. They produce twice in the year, in spring and summer, and have from six to eight young ones at each litter. The affection of these animals for their offspring is scarcely exceeded by any others whatever. Mr. Pennant assures us, that a female Meadow Mouse was seduced into a wire trap, by placing its brood into it; and she was so intent on fostering them, as to seem perfectly regardless of her captivity†.

The Meadow Mouse is called, in Wales, *llygoden gwŷta'r maes*: in France, *campagnol*, *mulot a courte queue*, *petit rat des champs*, *ratte couette*: in Italy, *campagnoli*: in Germany, *kleine feldmaus*: in Austria, *erdzeist*: in Holland, *veldmuus*: in Denmark, *maarkmuus*, *skier-muus*: in Sweden, *molle*: in Russia, *pestzowaja-mysch*.

* Buffon par Sonnini, xxv. p. 224.

† Pennant's British Zoology, i. p. 124.

OF SQUIRRELS IN GENERAL.

THE Squirrels are elegantly formed animals; and most of the species are remarkable for the sprightliness of their motions. They climb the smooth trunks of trees with the utmost agility; and skip about among the branches almost like birds. Two or three of the species reside in burrows, which they dig under the surface of the earth. These never climb; and consequently have the name of *Ground Squirrels*. About six are furnished with membranes, extending on each side of their body, from the fore to the hind legs, by which they are rendered so buoyant in the air, that, in leaping from the high branches of one tree to the lower ones of another, they can pass a very considerable space, without danger of falling to the ground.

The tails of all the *Tree Squirrels* are exceedingly long, bushy, and light, having the long hairs so extended towards each side, as to render this member much wider than it is deep. In the extensive leaps that the animals take from tree to tree, their tail seems to serve the same purpose which the feather does to an arrow: it balances the body, and renders their motion through the air much more steady than it would otherwise be. In their ordinary motions, or when they are at rest, the Squirrels gene-

rally carry their tails erect, or laid over their back, in order, say some writers, to protect them from the sun or rain.

All the species live on vegetable food, such chiefly as fruit, nuts, and the bark, seeds, and buds of trees. They sit upright on their hind legs to eat. None of them are carnivorous.

Some few of the species live in troops, consisting of immense numbers; and they are occasionally known to commit great depredations in cultivated countries. A reward of three pence per head was offered by the government of Pennsylvania, in the year 1749, for the destruction of the Grey Squirrels*; and, in the course of twelve months, this reward was claimed for no fewer than *six hundred and forty thousand*.

Most of the Squirrels may be rendered tame; and, in confinement, they are generally frolicsome and playful animals. But, on the least irritation, they will bite very keenly.

The skins of all the species are considered valuable as furs; and their flesh is a very palatable food.

* *Sciurus cinereus* of Linnæus.





Common Squirrel.

THE COMMON SQUIRREL*.

No animal is more admired for elegance of form, or general beauty of appearance, nor can any be more active, sprightly, or graceful in its motions, than this. During the whole day it is constantly awake and alert; and, in its native woods, may often be observed moving about with admirable agility among the branches of the trees, sometimes elevating its light and spreading tail, and sometimes carrying it stretched out at full length. It runs along the trunks and branches of trees without any apprehension of danger, and leaps from tree to tree with such certainty as seldom indeed to lose its hold.

This activity renders it a very difficult task to take full-grown Squirrels alive. School-boys, however, sometimes contrive to do this, by going, in great numbers, into the woods, and pursuing the animals with violent noises. On such occasions their recollection forsakes them, and they often fall to the ground from terror and alarm.

* *Sciurus vulgaris*.—*Linnaeus*. *L'écureuil*.—*Buffon*.

For the description of the Squirrel, see the Synopsis, p. 47, No. 31.

These sprightly and diverting animals live entirely on vegetable food. They eat nuts of all kinds, and acorns; and are particularly fond of the buds and young shoots of trees. Their gullet is more narrow than that of most other quadrupeds of equal size with themselves. In a large Squirrel that I examined, I remarked that the gullet was not more than the tenth part of an inch in diameter. A conformation so singular is supposed to be given for the purpose of preventing them from disgorging their food in descending the trunks or branches of trees, or in their leaps from above downward. When these animals eat, or clean themselves, they sit erect, covering the body with their tail, and using their fore-feet like hands.

The Squirrel seldom exerts its voice. When, however, it is particularly pleased, it sometimes makes a purring noise, not much unlike that of a Cat; and when wounded, it emits a very shrill and piercing note. It has, besides these, a loud growl of discontent, which it occasionally utters when teased or irritated.

In the spring of the year these creatures are peculiarly active, pursuing each other among the trees, and exerting various efforts of agility. During the warm evenings of summer they may be observed in a similar exercise. At the approach of winter they lay up a store of provisions, consisting chiefly of nuts and acorns, to serve them for food during those succeeding months that the ground is covered

covered with snow. These provisions are not often deposited in the nests of the animals, but in some hollow part of the tree; and recourse is never had to them except in case of necessity, and when no other food is conveniently to be found abroad. If the winter proves longer and more severe than usual, it is said that the store is sometimes consumed before the snow is entirely off the ground. In this case, (which indeed very seldom occurs,) the animals descend from the trees and scratch under the snow, where they can always find sufficient food to preserve them alive till the trees again put forth their buds.

At the commencement of spring, the Squirrels come into season; and the females produce their three or four young ones, generally about the end of May or the beginning of June. The nest in which these are deposited, and which the old animals afterwards make their chief place for repose, is exceedingly curious in its construction. It is generally formed amongst the large branches of a great tree, where they begin to fork off into small ones. After having chosen the place, where the timber is somewhat decayed, and where a hollow may the more easily be formed, the Squirrels begin their work by making a kind of level between these forks. Then bringing moss, twigs, and dry leaves, they weave these together with so much art and ingenuity, that they are capable of resisting the most violent storms. The nest is covered up on all sides, and

has but a single opening at top, just large enough to admit the animal to pass and repass; and this opening is itself defended from the weather, by a kind of canopy, formed like a cone, so as to throw off the rain, however heavily it may fall. In the inside, the nest is so formed as to be exceedingly roomy and commodious. It is soft, well knit together, and in every respect warm, comfortable, and convenient.

Squirrels, when caught young, are often kept in cages, or sometimes fastened by long chains, and rendered docile. But they are generally very irritable animals, and on the slightest offence will bite even the person from whom they receive the greatest attention. They likewise gnaw almost every thing they can reach, such as clothes, linen, or furniture; and if once they can escape from their confinement, they are gone for ever. The Hon. Daines Barrington amused himself many years by keeping Squirrels; and he observed in these animals the same variety of character and disposition that Mr. Cowper remarked in his tame Hares*. He has had them inanimate and sprightly, wild and familiar, mischievous and harmless, obedient and headstrong. But what is singular, he re-remarked in almost all the Squirrels he possessed,

* See the account of these Hares in p. 298.

(and at different times he had a great many,) that they had a peculiarly musical ear. Whenever any instrument was played upon, they moved in measure in their cage, or beat their feet upon the ground in something like regular cadence. Mr. Barrington says, that he has seen them continue in one measure to an allegro movement, for near ten minutes together:—after a short pause they began another measure; and after a longer one, he has seen them take a third.

He had two Squirrels, a male and a female, in the same cage. These often performed a particular kind of dance, which he has thus explained. The male, in his motions, described a part of a circle on one side of the cage; and the female, which he kept exactly before him, described, in her motions, a part of a circle somewhat smaller. In these actions, their feet always came so regularly down together, as only to produce a single sound.

In confinement, as well as in their native woods, Squirrels are animals remarkable for their cleanliness. Mr. Barrington says, that he never knew his Squirrels to foul their bed-place in the least; and they occupied a considerable part of their time, when awake, in cleaning and dressing their fur. He informs us, likewise, that a Squirrel will on no account give up any food that it has in its paws, for the purpose of taking what is offered that it may happen to like better. The animal always hides what it had before obtained, in some part of its cage,

cage, and then proceeds to take the fresh supply. The sagacity of the above mentioned little creatures, in their choice of food, was at all times so admirable, that Mr. Barrington had no difficulty in believing what is usually said of Squirrels, that, in all their store of winter provisions, there can never be found an unsound or a bad nut. He had made innumerable trials with them, but in every instance they rejected a nut that was not good, almost the moment it was put into their paws.

The courage of these animals is somewhat surprising. This observing naturalist says, that he has often seen a Squirrel tremble very much at the first appearance of a Dog or Cat; and after some minutes, passed in efforts with itself, it has by degrees approached its formidable adversary, and even ventured to come directly under its nose. He informs us, that the approach is always made by quick and short leaps; the animal in these motions beating the ground firmly with its feet, and assuming an affected boldness of countenance, as if for the purpose of imposing on its adversary by the appearance of courage.

During all the time that Mr. Barrington kept these Squirrels, no instance occurred of the females producing young ones in their confinement.

The flesh of the Squirrel is a well-flavoured and palatable food. The skin is of some value as a fur; and the long hairs of the tail are made into pencils, which are used by painters and gilders.

In

In the north of Europe and America, the red summer coat of the Squirrels, on the approach of winter, changes to grey: and in gelid climates, it is said that this change will take place even in a room from which the cold air is perfectly excluded. In some of the northern parts of Great Britain, a variety of the Common Squirrel is now and then observed, which has the usual colours in every part except the tail, and this is white.

This animal is called *gwiware*, in Wales: in France, *écureuil*: in Italy, *schirivolo*, *chirivolo*, *schirato*, *schiratolo*, *schiarro*: in Spain, *harda-esquilo*, *hardilla*: in Germany, *eychorn*, *eichhermlyn*: in Portugal, *ciuro*: in Holland, *inkhoorn*, *eckoorn*, *eickhoorn*: in Sweden, *ikora*, *ikorn*, *graskin*: in Poland, *wijerwijorka*: in Denmark, *egern*: in Austria, *eichkatze*: in Norway, *ikorn*: in Lapland, *orre*: in Hungary, *mookusch*: in Russia, *bjelka*.

OF DORMICE IN GENERAL.

IN their general appearance and manners, the Dormice are allied both to the Murine Quadrupeds and the Squirrels. Their tails, however, though covered thickly with hair, are by no means so bushy as the tails of the latter animals; and in their bodies, they are, on the whole, considerably more plump and round than these.

They feed on fruit, nuts, seeds, and corn; and, in eating, they sit upright and carry the food to their mouth with their fore-feet. We are informed by Linnæus, that Dormice, when thirsty, do not lap like other quadrupeds, but that they dip their fore-feet, with the toes bent, into the water, and drink from them*. The pace of these animals is a kind of leap, performed chiefly with the hind-legs, assisted by the tail.

Some species of Dormice form their nests of dried leaves, mosses, and grass, in the hollows of decayed trees; and others, among the branches of low and thick shrubs. In these they sleep in the day time, only venturing abroad, in search of food, in the evening and night. During the winter months

* Linn. Syst. Nat. Gmel. i. p. 157.





Common Dormouse.

they lie, in an entirely torpid state, in holes or burrows, under the surface of the ground.

The females breed in the spring or summer, and generally produce from three to twelve young ones at a litter.

THE COMMON DORMOUSE*.

SLEEPER.

THESE animals were once classed by Linnæus among the Mice†; but whatever may be their general external resemblance to Mice, they seem, in their habits of life, and in most of their actions, to have a nearer alliance to the Squirrels. They inhabit woods or thick hedges; and form their nests in the hollows of low trees, or near the bottom of close shrubs. They want much of the sprightliness of the Squirrel; and never ascend to the tops of trees, or, like that animal, attempt to bound even from one branch of a shrub to another.

* *Myoxus Muscardinus*.—Linnæus. *Le Muscardin*.—Buffon.

For the description of the Dormouse, see the Synopsis, p. 49, No. 32.

† Under the name of *Mus avellanarius*.

During the winter, they are to be found only in a torpid state, in the burrows which they form in the ground; each in its separate hole, rolled closely up like a ball. But as, in the course of that season, they are liable to be sometimes revived by the warmth of sunny days, they store up, previously to their retirement, a sufficient quantity of nuts, acorns, and other provisions, to support them when they are thus occasionally roused from their slumber.

Some very interesting observations respecting the hybernation of these animals were made in the year 1792, by a gentleman of Middleshaw, whose name is Gough. He procured, in the month of January, two Dormice, which had been taken from the woods only a few days before they came into his hands; and confined them in a cage furnished with a thermometer, and placed in a chamber where no fire was kept. They were supplied regularly with water, and with food, consisting of hazelnuts and biscuits. The weather in February being warm, for the season, at the beginning and end of the month, and frosty from the 16th to the 28th, Mr. Gough had an opportunity to observe, that whenever the thermometer, which was attached to the cage, fell to 42° , the Dormice became inactive, and remained apparently insensible as long as the heat of that part of the chamber did not exceed the above-mentioned temperature; but whenever the mercury reached 47° , they became very susceptible

ceptible of external impressions, and awaked in the evenings, when they had recourse to their stock of provisions, of which they consumed not a little. The same dry food being injudiciously continued through the summer, they became sickly, and died; so that Mr. Gough had not a second opportunity to attend to the economy of this couple during the cold season.

About the middle of April, 1793, he obtained a third Dormouse. Experience taught him to manage this in a manner more congenial to its constitution. In addition to the nuts and biscuits, it was constantly supplied with green hazel-buds, or raisins, in spring; with ripe fruits in summer; and with apples and raisins in winter. This generous diet not only preserved the little animal in health and high condition, but appeared to fortify it against the benumbing effects of cold, which it supported the following winter much better than the other couple had done; for it never slept more than forty-eight hours successively, and that but seldom, without visiting the cup which contained its provisions. Mr. Gough now began to suspect that the torpidity of the Dormouse, in a wild state, was only a habit imposed by necessity, on a constitution which nature had intended to retain life during the cold season of winter, with but little food and an imperfect degree of respiration, as well as a languid, or perhaps, partial action of the sanguiferous system. The uncommonly severe weather

ther which ushered in the year 1795, confirmed this opinion apparently beyond dispute; for, notwithstanding the hard frost, the animal braved the cold with wonderful indifference. It awoke every evening, and generally consumed, in the course of the night, a quantity of food amounting to about a hundred or a hundred and twenty grains; and it frequently gnawed the ice which covered the water in its cage. It even undertook, in the coldest part of January, to repair its nest, which happened to receive an injury, and it accomplished the task in the course of a single night.

The Dormouse has, in no instance, been known to frequent houses; and it is very seldom to be found even in gardens. The female forms her nest of interwoven moss, dead leaves, and grass, about six inches in diameter, with an orifice near the top, generally amongst the branches of nut-trees, or other underwood. In this, about the month of May or June, she brings forth her offspring, which are usually three or four in number.

In some parts of the continent, the flesh of the Dormouse constitutes a favourite article of food.

In Wales this animal is called *pathew*: in France, *muscardin*, *croque-noix*, *rat-d'or*: in Italy, *muscardino*: in Spain, *liron*: in Germany, *rothe*, *wald-maus*: in Holland, *hazel muus*: in Sweden, *skogsmus*: in Denmark, *hasel muus*: in Russia, *slepz*.

OF

OF THE HARE TRIBE IN GENERAL.

HARES subsist entirely on vegetables. The habitations of most of the species are burrows, formed under the surface of the ground. Some of them collect into flocks of five or six hundred, or even more, and migrate in these numbers from place to place, frequently to a great distance, in search of food.

In Dr. Shaw's excellent work on General Zoology, a very curious particular is related respecting these animals. He informs us, that when Hares are considered with anatomical exactness, they exhibit some peculiarities of structure, by which they make an indistinct approach to the ruminating animals; and that the Common Hare is, by many persons, supposed actually to ruminate. This opinion has been derived not merely from the peculiar motions observable in the mouth, which present an obscure appearance of rumination, but from the structure of the stomach, which is marked, as it were, into two regions, by a particular fold or ridge.

The females generally produce from three to eight young ones at a birth.

In the northern latitudes, where the frosts of winter are very intense, and where snow lies for several months on the ground, all the Hares, at the

approach of that season, change their colour to white. Their furs are considered valuable, as articles of commerce.

THE COMMON HARE*.

Few animals have more natural shyness and timidity than the Hare; and, as it is a weak and defenceless creature, it is often indebted to this timidity for its preservation. It rarely leaves its *form*, or seat, during the day-time; but in the night, takes a circuit round the neighbouring copses or fields, in search of food. When its appetite is satisfied, it returns always by the same tracks, and through the same *meuses*, or passes.

With step revers'd

She forms the doubling maze; then, ere the morn
Peeps through the clouds, leaps to her close recess.

Of this constant return by the same path, the poacher too often avails himself, by laying snares, or nets, in the *meuses*. By these means, great numbers of Hares are annually destroyed. In the

* *Lepus timidus*.—*Linnaeus*. *Le Lievre*.—*Buffon*.

For the description of the Hare, see the Synopsis, p. 50, No. 33.



Common Hare.



spring of the year the Hares are generally to be found on fallows, or amongst green corn. During the autumn, they frequent stubbles, and turnip fields; and in winter they seat themselves among brambles, or tufts of thorns. In the latter season, they are said generally to be found in a southern aspect, where they receive all the possible warmth of the sun. During the fine moonlight evenings of summer, several of these animals may often be seen sporting together, leaping about, and pursuing each other with the greatest playfulness; but the least noise alarms them, and they precipitately scamper off, each in a different direction.

Their most favourite food is green corn, parsley, pinks, or birch; and in young plantations they sometimes prove very injurious, by eating the bark from the trees: this they do from every sort, except the alder and lime. A Suffolk gentleman, in 1798, was obliged to destroy his Hares, near some new plantations; and the amount of what were known to have fallen victims, was *one thousand and eighty two*. In some districts on the continent, these animals are very numerous, and consequently very destructive. In two days shooting, at the chateau of Prince Adam Daversperg, in Bohemia, in the year 1788, there were very nearly *eleven hundred* Hares killed. The nobility, and other privileged owners of landed property, in various parts of Germany and Prussia, are extremely tenacious of their game, and preserve them with the

utmost rigour, occasionally hunting or shooting them for the use of their family, and not unfrequently for sale*.

Male and female Hares may be distinguished when running in the fields, but particularly when they are hunted, by the following marks. A *buck* Hare is known, on first starting from his seat, by the whiteness of his hinder parts. His head also is shorter, his ears are more grey, his shoulders are redder, and his body is smaller than those of the *doe*. It has been remarked by some sportsmen, that if a Hare, in its seat, has its ears lying on its shoulders, close to each other, it is a male; and that if they are laid on each side of the neck, it is a female. A Hare that is hunted to its form along highways, and feeds far away from cover, and makes its doublings and crossings wide and large, is a buck; for the doe generally keeps close to the side of some cover: and when she goes to feed in corn-fields, she seldom crosses over the furrows, but follows the track of them. When does are hunted, they frequently turn, use many stratagems, and seldom leave the country round their seat; whilst the buck, after two or three turns about his form, runs straight forward for four or five miles, and then probably squats down in some place where he has before preserved himself.

* Daniel's Rural Sports, i. p. 322.

A young Hare may be known from an old one by the following signs. When the animal is dead, if the thumb-nail be thrust against the knee-joints of the fore-legs, it will be easy to distinguish whether the heads of the bones are close together or not. If there is no space, the Hare is an old one; but if there is a separation betwixt them, it is a sure proof that the animal is young; and the greater the separation is, the younger the Hare may be considered. If the under jaw is easily broken, the Hare is a young one. The cleft of the lips spreading very much, the claws being blunt and rugged, and the ears dry and tough, are signs of old age. When, on the contrary, the ears easily tear, the cleft of the lip is narrow, and the claws are smooth and sharp, the Hare is young*.

A Hare, when *newly killed*, will be stiff, and the flesh of a pale colour: if it is limber, and the flesh is beginning to turn black, it may to a certainty be considered as *stale*.

Hare hunting is at present a popular amusement amongst country gentlemen in most parts of England; and it was formerly so much followed, that, as appears from a manuscript written in the early

* "La Vénérerie," par M. du Fouilloux.—See also Daniel's Rural Sports, i. p. 323 and 353.

part of the fourteenth century, the ladies of that period had hunting parties by themselves, in which they rode *astride* upon the saddle. It is, however, to be presumed, that this indecorous custom was not of long continuance; for a writer of the seventeenth century informs us, that "the ladies of *Bury*, in Suffolk, who used hawking and hunting, were once in a "great vaine of wearing breeches." Queen Elizabeth was very fond of the chase, and frequently indulged herself in following the Hounds. "Her majesty," (says Rowland White, in a letter to Sir Robert Sidney, written only a few years before the death of the queen), "is well, and excellently disposed to hunting; for every second day she is on horse-back, and continues the sport long."

When this defenceless animal is before the Hounds, she employs much cunning and subtilty in endeavouring to escape from their pursuit. She never runs in a line directly forward; but constantly doubles about, and by this means frequently throws the Dogs off the scent. If a Hare is run, either in or presently after rain, she will not take to the woods, on account of the wet that hangs on the small low boughs, but will often *squat* in the hedge of the cover; and, when the Hounds have overshot the scent, will return to her form. When hard pressed, she will mingle with a flock of Sheep, run up an old wall and conceal herself among the herbage on the top of it: she will cross a river several

several times, at small distances, or take the ground like a Rabbet. It is said, however, that a skilful huntsman, who has pursued the same Hare twice, may certainly kill her the third time; for the animals generally use the same doublings, so that they may be easily prevented in any one of them, which defeats all the rest*. What is very remarkable in Hares is, that however frequently they are hunted, they seldom leave the place where they were brought forth, or where they usually sit; and it is no uncommon circumstance to find them, on the day after a long and severe chase, on the spot from which they were before started.

The ears of the Hare are so admirably contrived by their size and shape, as to convey the most remote sounds. They are capable of being turned, with the greatest ease, in all directions; and, when the animal is close pursued, she lays them flat on her back, so as to receive all the sound that comes from behind. The legs, and especially the hinder ones, are remarkably muscular; and the latter are generally so long as to give the animal considerable advantage when she is hunted on rising ground, to which, indeed, she always directs her course when started. In dry or frosty weather she has another advantage, in the feet being protected beneath with

* Daniel's Rural Sports, i. p. 261.

a thick covering of hair, which prevents her from slipping, or taking any false steps.

The situation of the eyes of the Hare (at a great distance from each other) is such, that, when she is at rest, she is enabled to observe, without difficulty, and almost without motion, objects that are on nearly all sides of her. In the chase, however, it is certain that these animals see but very imperfectly forward: when closely pursued, the fear of the Dogs takes away also their presence of mind, and they frequently run against objects. It is from this circumstance that the vulgar notion has arisen, of the Hare sometimes running itself blind.

In Sandpit Wood, in the parish of Terling in Essex, a pack of Foxhounds, in 1782, had just unkennelled; and the Hares, of which there were great numbers in the cover, were, many of them, disturbed. In one of the paths, a Hare met and ran against a Terrier which was hastening to the cry, with such velocity, that both the animals were apparently killed. The Dog, with some difficulty, was recovered; but the Hare's skull was fractured to pieces*.

The speed of Hares is so great, that instances have occurred of even Horses being killed in attempting to keep up with Greyhounds that have pursued them. Without reckoning the various doublings

* Daniel's Rural Sports, i. p. 319.

that were observed in the course, a Hare has been known to run upwards of *four miles in twelve minutes*. In February, 1789, a Hare was pursued in Essex, which ran more than twenty miles in about two hours;—and a Hare that was started on Stoke Down, ran, it was supposed, near *fifteen miles in three quarters of an hour**.

It is said, that from May till August these animals may be enticed to approach the sportsman, by means of a pipe, or call. The sound from this instrument is a kind of squeak, first slow and then quicker, and is supposed to resemble the call betwixt the male and female Hares. The *harepipe* is mentioned in our old law books, as a device formerly used by poachers, in killing Hares; and in the deputations to game-keepers, it was described as an instrument which they were empowered to seize.

The Hare is a very gentle animal, and when caught young is susceptible of education. The best proof that I can adduce of this, is to recite, without abridgment, Mr. Cowper's highly interesting narrative respecting his tame Hares. This is inserted in some of the latest editions of his poems; but as it has not hitherto appeared, in illustration of the character of the animal, in any book of natural history, I trust that, without censure, (on

* Daniel's Rural Sports.—See the article Greyhound.

account of its length,) I may be allowed to introduce it here.

“In the year 1774, being much indisposed both in mind and body, incapable of diverting myself either with company or books, and yet in a condition that made some diversion necessary, I was glad of any thing that would engage my attention without fatiguing it. The children of one of my neighbours had a Leveret given them for a plaything; it was at that time about three months old. Understanding better how to tease the poor creature than to feed it, and soon becoming weary of their charge, they readily consented that their father, who saw it pining and growing leaner every day, should offer it to my acceptance. I was willing enough to take the prisoner under my protection; perceiving that, in the management of such an animal, and in the attempt to tame it, I should find just that sort of employment which my case required. It was soon known among the neighbours that I was pleased with the present; and the consequence was, that in a short time I had as many Leverets offered to me, as would have stocked a paddock. I undertook the care of three, which it is necessary I should here distinguish by the names I gave them:—Puss, Tiney, and Bess. Notwithstanding the two feminine appellations, I must inform you that they were *all males*. Immediately commencing carpenter, I built them houses to sleep in; each had a separate apartment, so contrived

trived that an earthen pan, placed under each, received whatsoever fell from them. This being regularly emptied and washed, they were thus kept perfectly sweet and clean. In the day-time, they had the range of a hall; and at night, each retired to his own bed, never intruding into that of another.

“Puss grew presently familiar, would leap into my lap, raise himself upon his hinder feet, and bite the hair from my temples. He would suffer me to take him up and carry him about in my arms; and has, more than once, fallen fast asleep on my knee. He was ill three days, during which time I nursed him; kept him apart from his fellows, that they might not molest him; (for, like many other wild animals, they persecute one of their own species that is sick;) and, by constant care, and trying him with a variety of herbs, restored him to perfect health. No creature could be more grateful than my patient after his recovery; a sentiment which he most significantly expressed by licking my hand, first the back of it, then the palm, then every finger separately, then between all the fingers, as if anxious to leave no part unsaluted: a ceremony which he never performed but once again, upon a similar occasion. Finding him extremely tractable, I made it my custom to carry him, always after breakfast, into the garden, where he hid himself generally under the leaves of a cucumber vine, sleeping or chewing the

the cud* till evening: in the leaves also of that vine he found a favourite repast. I had not long habituated him to this taste of liberty, before he began to be impatient for the return of the time when he might enjoy it. He would invite me to the garden, by drumming on my knee, and by a look of such expression as it was not possible to misinterpret. If this rhetoric did not immediately succeed, he would take the skirt of my coat between his teeth, and pull at it with all his force. Thus, Puss might be said to be perfectly tamed; the shyness of his nature was done away; and, on the whole, it was visible by many symptoms, which I have not room to enumerate, that he was happier in human society, than when shut up with his natural companions.

“Not so Tiney; upon him the kindest treatment had not the least effect. He too was sick, and in his sickness had an equal share of my attention; but if, after his recovery, I took the liberty to stroke him, he would grunt, strike with his fore-feet, spring forward, and bite. He was, however, very entertaining in his way. Even his surliness was matter of mirth; and in his play, he preserved such an air of gravity, and performed his feats in such a solemnity of manner, that in him too I had an agreeable companion.

* See the description of the HARE TRIBE.

“Bess, who died soon after he was full grown, and whose death was occasioned by being turned into his box, which had been washed, while it was yet damp, was a Hare of great humour and drollery. Puss was tamed by gentle usage; Tiney was not to be tamed at all; and Bess had a courage and confidence that made him tame from the beginning. I always admitted them into the parlour after supper, when the carpet affording their feet a firm hold, they would frisk, and bound, and play a thousand gambols, in which Bess, being remarkably strong and fearless, was always superior to the rest, and proved himself the Vestris of the party. One evening, the Cat being in the room, had the hardiness to pat Bess upon the cheek; an indignity which he resented by drumming upon her back with such violence, that the Cat was happy to escape from under his paws, and hide herself.

“I describe these animals as having each a character of his own. Such they were in fact; and their countenances were so expressive of that character, that, when I looked only on the face of either, I immediately knew which it was. It is said that a shepherd, however numerous his flock, soon becomes so familiar with their features, that he can, by that indication only, distinguish each from the rest; and yet, to a common observer, the difference is hardly perceptible. I doubt not that the same discrimination, in the cast of countenances, would be discoverable in Hares; and am persuaded

persuaded that among a thousand of them, no two could be found exactly similar: a circumstance little suspected by those who have not had opportunity to observe it. These creatures have a singular sagacity in discovering the minutest alteration that is made in a place to which they are accustomed, and instantly apply their nose to the examination of a new object. A small hole had been burnt in the carpet; it was mended with a patch, and that patch in a moment underwent the strictest scrutiny. They seem too to be very much directed by smell in the choice of their favourites. To some persons, though they saw them daily, they could never be reconciled, and would even scream when they attempted to touch them; but a miller coming in, engaged their affection at once: his powdered coat had charms that were irresistible. It is no wonder that my intimate acquaintance with these specimens of the kind has taught me to hold the sportsman's amusement in abhorrence. He little knows what amiable creatures he persecutes; of what gratitude they are capable; how cheerful they are in their spirits; what enjoyment they have of life; and that, impressed as they seem with a peculiar dread of man, it is only because man gives them peculiar cause for it.

“That I may not be tedious, I will just give a short summary of those articles of diet that suit them best.

“I take it to be a general opinion that they
graze;

graze; but it is an erroneous one: at least grass is not their staple: they seem rather to use it medicinally, soon quitting it for leaves of almost any kind. Sowthistle, dent-de-lion, and lettuce, are their favourite vegetables, especially the last. I discovered, by accident, that fine white sand is in great estimation with them; I suppose, as a digestive. It happened that I was cleaning a bird-cage whilst the Hares were with me; I placed a pot filled with white sand upon the floor, which, being at once directed to by a strong instinct, they devoured voraciously. Since that time, I have generally taken care to see them well supplied with it. They account green corn a great delicacy, both the blade and stalk; but the ear they seldom eat. Straw of any kind, especially wheat-straw, is another of their dainties. They will feed greedily upon oats; but if furnished with clean straw, never want them: it serves them also for a bed; and, if shaken up daily, will be kept sweet and dry for a considerable time. They do not, however, require aromatic herbs, but will eat a small quantity of them with great relish, and are particularly fond of the plant called *musk**. They seem to resemble sheep in this, that, if their pasture be too succulent, they are subject to the rot; to prevent which I always made bread their principal nourishment, and filling a pan with it cut

* *Erodium moschatum*?

into small squares, placed this every evening in their chambers; for they feed only at evening and in the night. During the winter, when vegetables were not to be got, I mingled this mess of bread with shreds of carrot, adding to it the rind of apples cut extremely thin; for, though they are fond of the paring, the apple itself disgusts them. These, however, not being a sufficient substitute for the juice of summer herbs, they must at this time be supplied with water; but so placed that they cannot overset it into their beds. I must not omit to remark, that occasionally they are much pleased with twigs of hawthorn, and of the common briar, eating even the very wood when it is of considerable thickness.

“Bess, I have said, died young; Tiney lived to be nine years old, and died at last, I have reason to think, of some hurt in his loins by a fall; Puss is still living, and has just completed his tenth year, discovering no signs of decay, nor even of age, except that he is grown more discreet, and less frolicsome than he was. I cannot conclude without observing, that I have lately introduced a Dog to his acquaintance—a Spaniel that had never seen a Hare, to a Hare that had never seen a Spaniel. I did it with great caution; but there was no real need of it. Puss discovered no token of fear; nor Marquis the least symptom of hostility. There is, therefore, it should seem, no natural antipathy between Dog and Hare; but the pursuit of the
one

one occasions the flight of the other, and the Dog pursues because he is trained to it. They eat bread at the same time out of the same hand, and are in all respects sociable and friendly*.

“I should not do complete justice to my subject, did I not add, that Hares have no ill scent belonging to them; that they are indefatigably nice in keeping themselves clean, for which purpose Nature has furnished them with a brush under each foot; and that they are never infested by any vermin †.”

Hares breed at all times in the year, except during about ten weeks or two months in the winter. They go with young a month; have four litters in the year; and usually produce two, sometimes three, and rarely four at a litter. The offspring of the Hare, differing in that respect from those of the Rabbet, come into the world perfectly

* How admirably does this observation answer a question of Mr. Daniel's, respecting the scent of the Hare; whether it may not be considered as an extraneous “stock of odoriferous particles, given “by Divine Wisdom to the animals, *for the express purpose of being “hunted!”*

† This account is dated May 28th, 1784, and was inserted in the Gentleman's Magazine for the ensuing month. After Mr. Cowper's death, the following memorandum was found among his papers:

“Tuesday, March 9, 1786.

“This day died poor Puss, aged eleven years eleven months. He died between twelve and one at noon, of mere old age, and apparently without pain!”

Y formed

formed and quick-sighted the moment they drop. The mother suckles them for about twenty days, after which they separate from her, and procure their own food, making their forms, or seats, at sixty or eighty paces distance from each other. Hares come to maturity in somewhat less than twelve months, and, as we have seen by Mr. Cowper's account, live at least ten or eleven years. It is said that these animals do not pair; but that the male pursues and discovers the female by the quickness of his scent.

Sir Thomas Brown, in his Treatise on Vulgar Errors, asserts, from his own observation, that female Hares frequently have in their ovaria, at the same time, young ones of different ages; and that, after those that are most mature are brought forth, there will often remain others which are very far from the term of their exclusion. This superfetation, or conception upon conception, has not hitherto been remarked in any other species of animals.

The fur of the Hare forms a principal material in the manufacture of hats; and vast quantities are annually imported into Great Britain, for that purpose, from Russia and Siberia. In some parts of France this fur is spun, and afterwards woven into a kind of cloth. The flesh was considered a great delicacy by the Romans; but it was forbidden by the Druids, and the Britons of the early centuries. It is to this day prohibited by the Mahometans
and

and Jews; and the Cophts, who have adopted many of the Jewish customs, likewise refrain from it*.

In all the extreme northern countries, Hares, at the approach of winter, change their coloured coat for a white one. And in a few instances these animals have been seen with white fur, even in the southern counties of England.

In Wales this animal is called *ysgyfarnog*, *ceinach*: in France, *lievre*: in Italy, *lepro*, *leivora*: in Spain, *leibre*: in Portugal, *lebro*: in Germany, *hase*, *has*, *haas*: in Holland, *hase*, *rawmler*: in Sweden and Denmark, *hare*: in Poland, *sajonz*: in Norway, *jase*: in Lapland, *niaamel*: in Schlavonia, *saiz*: in Russia, *zaitza*.

* Sonnini's Travels in Egypt, ii. p. 130.

THE VARYING HARE*.

WHITE HARE, OR ALPINE HARE.

THESE Hares, says Mr. Pennant, inhabit the summits of the Highland mountains; and never descend into the plains or vales. They are not able to run swiftly; and, when pursued, they generally seek for shelter beneath stones, or in the clefts of rocks.

In some parts of Russia and Siberia, where they are found in great abundance, the Varying Hares collect together in vast numbers. Flocks of five or six hundred are sometimes observed, at the approach of winter, migrating into the lower parts of the country, in search of food. They return at the first breaking up of the frost.

They are gentle and docile animals; and, when tamed, are very sprightly and full of frolic. They are fond of honey and sweetmeats.

In the extreme northern parts of the continent, they continue white during the whole of the year; but in Scotland they exchange their grey coat for

* *Lepus variabilis*.—*Linnaeus*.

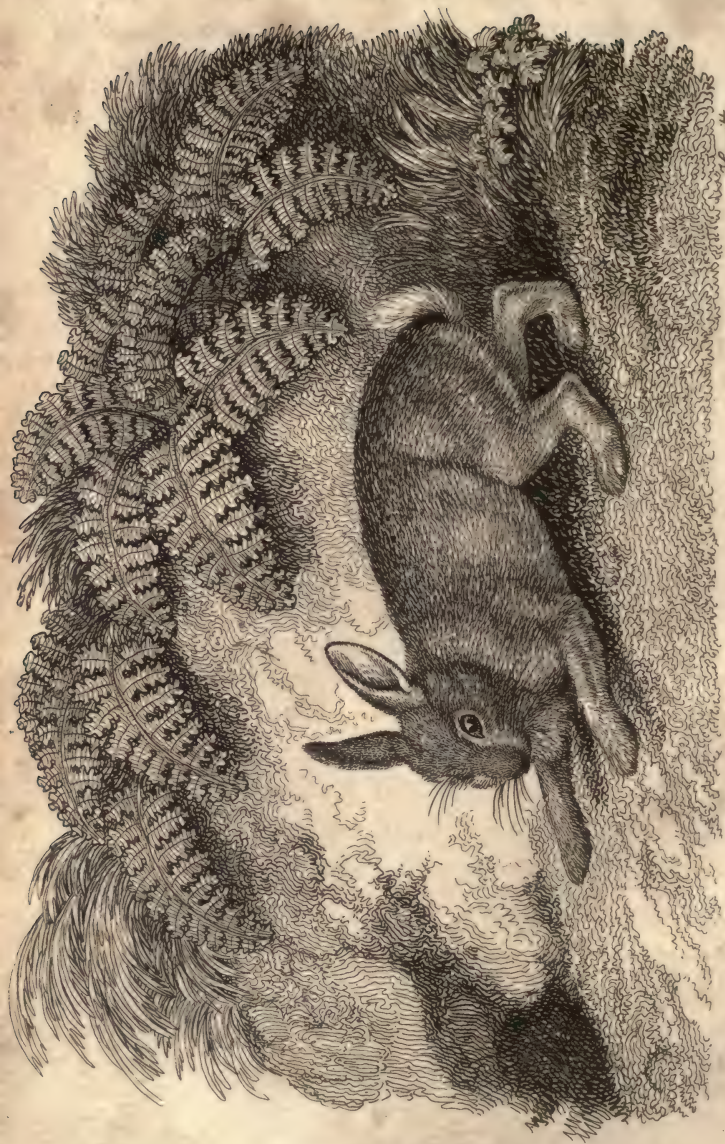
For the description of the Varying Hare, see the Synopsis, p. 51, No. 34.



Varying Hare.







Howitt

Rabbit.

Pub. by W. Darton & J. Harvey, Sept. 17, 1868.

Body 20 inches. Tail 3

a white one, about the month of September, and become again grey in April. It is remarkable that, even if this animal be brought into a house, and kept in stoved apartments, it still changes its colour at the same periods as when among its native mountains.

The skins of Varying Hares, particularly when they are white, form a considerable article of commerce betwixt the Russians and Chinese. The flesh is, at all times, harder, more dry, and less flavoured, than that of the common kind; but in winter it is extremely insipid.

THE WILD RABBIT*.

IN some countries, Rabbits have been known to multiply so fast, as to prove seriously injurious to the inhabitants. It is recorded by Pliny, that in the islands of Majorca and Minorca, anciently called the Baleares, the inhabitants were compelled to implore the assistance of a military force from

* *Lepus cuniculus*.—*Linnaeus*. *Le Lapin*.—*Buffon*.

For the description of the Rabbit, see the Synopsis, p. 52, No. 35.

Augustus to destroy them. And, not many years ago, they had become so numerous in Basiluzzo, one of the Lipari islands, that, at one time, Spallanzani informs us, the people were in dread of famine, from the devastations they had committed among the corn. By importing into the island a quantity of Cats, which were employed like Ferrets, to pursue and kill them in their holes, they were, at last, brought within due bounds*.

In many of the uninclosed parts of Great Britain, the Rabbit is, on the contrary, an animal very advantageous to the proprietors of land; and it is supposed that there are few sandy, or other loose soils, where the ground rises in different places into hills, that can be more profitably employed than as Rabbit warrens. On level ground the animals find it difficult to form their burrows, as the mould is to be all thrown upward to the surface: but against the side of a hill they have not this difficulty to encounter, since the declivity affords a ready fall for the earth. With respect to the value of a well-stocked warren, the following is a curious estimate made by Mr. Marshall. "The hide of a bullock, of some breeds, is not worth more than one twentieth part of the carcass. The skin of a Sheep may, in full wool, be worth from a sixth to a tenth part of its carcass; but the fur of

* Voyage dans les deux Sicilies, ii. p. 108.

a Rabbit is worth twice the whole value of the carcass. Therefore, supposing the Rabbit to consume a quantity of food in proportion to the size of its body, it is, on the principle offered, a species of stock nearly *three times* as valuable as either cattle or sheep*." Rabbits are, moreover, a kind of stock that make the finest possible turf; for they not only bite closer than the larger quadrupeds, but they allow no bents to rise. It is from this circumstance that the most delicate turf for gardens is that taken from Rabbit warrens.

A rich soil should not, however, be stocked with Rabbits, since a flush of grass, after a dry season, is found to throw them into a *scouring*, which sometimes carries off vast numbers. Warren farms also are occasionally liable to great losses, from an epidemical disorder among the animals. The spring and autumn of 1798 were so favourable to the breeding of Rabbits, that the warrens, in all parts, were supposed never to have been more plentifully stocked; but great numbers of the young ones perished, from a disorder supposed to be produced by the continued wet in the autumn. It was infectious, and the first symptom of it was a swelling in the glands of the neck; the rot ensued, and death soon followed.

* Marshall's Rural Economy of Yorkshire, ii. p. 223.

In stocking a warren, whether flat or hilly, artificial burrows are at first made, in order to preserve the Rabbits from the attacks of vermin, till they can have time to dig their own. These burrows are formed with an *augur*, of a diameter about equal to the thickness of the animal's body; and in level warrens, they may often be found useful.

The accuracy of persons taking stock, upon the warren farms, betwixt an incoming and outgoing tenant, is very surprising. They attend, for some days, the appearance of the Rabbits, near the mouths of their burrows, in the dusk of the evening, and at day-light in the morning. The judgment formed, from this ocular inspection, of the apparent number, is said to be so well calculated, that, upon the destruction of many warrens, it has been found within very few of the real quantity.

In most warrens, the Rabbits are killed by means of Ferrets, which, on being put, muzzled, into the burrows, drive the animals into nets that are placed over the outlets. A Lurcher Dog is sometimes used for the same purpose; and it is said that the sounding of a trumpet in the holes will drive them out. The *wold* warreners catch Rabbits with three different kinds of implements; fold nets, spring nets, and a species of trap called *tipes*.—The *fold nets* are set, about midnight, between the burrows and the feeding grounds; the Rabbits being driven into them with Dogs, and kept

kept inclosed in the folds till morning.—The *spring net* is generally laid round a hay-stack, or other object of inducement for Rabbits to collect in numbers.—The *tipe*, or trap, consists of a large pit or cistern, covered with a floor. This has, near its centre, a small trap-door, nicely balanced, into which the Rabbits are led by a narrow *meuse*. This kind of trap used, formerly, to be set near a hay-stack; but, as turnips are now grown for the winter food of the animals, in an inclosure in the interior of the warren, the trap is placed within the wall of this inclosure. For a night or two the Rabbits are suffered to go through the *meuse* and over the trap, that they may be familiarized to the place where the turnips are grown. After that, the trap-door is unbarred, and immense numbers fall in. In emptying the cistern, the fat Rabbits are selected and killed, and the others are turned out upon the turnips to improve. Five or six hundred couples have not unfrequently been taken in one night by this contrivance; and in one instance, in the Driffeld warrens, as many as fifteen hundred couples.

A French writer has favoured us with the following very ingenious method of catching Rabbits, which he denominates, "*Le chasse du lapin à l'ecrevisse.*" "This chase is conducted by persons who neither employ Ferrets nor fire-arms. Over the openings of the burrows are placed nets, (as is usual in catching the animals by means of Ferrets,) and into one of these is put a lobster. By little and
little

little, the lobster arrives at the bottom of the hole. Here it fixes itself so firmly to the Rabbit, that it is compelled to attempt its escape, dragging, at the same time, its enemy along with it, into some one of the nets. This chase (the writer observes) requires much patience, since the operations of the lobster are very slow !!!”

The mode by which the warreners distinguish young Rabbits from old ones, is the same that has been mentioned respecting Hares; by feeling the knee-joints of the fore-legs. When the heads of the two bones which form these joints, are so contiguous, that little or no space is to be perceived between them, the Rabbit is an old one. On the contrary, should there be a perceptible separation between the bones, the animal is young; and is more or less so, according as the bones are more or less separated. If the Rabbit is an old one, the claws also are very long and rough, and the wool is mottled with grey hairs: the claws and wool are always smooth when young*.—Experienced Rabbit catchers have assured M. Sonnini, that they can immediately distinguish a male from a female Rabbit, by the mode of its coming out of its hole in the day time. The male always seems as if alarmed at finding itself unexpectedly in the light, and does

* Daniel's Rural Sports, i. 346—350.

not venture far from his habitation ; whereas the female goes at once to feed without fear*.

As these animals cannot easily articulate sounds, and as they live together, under the ground, in great numbers, they have a very peculiar method of giving alarm. When danger is threatened, they thump on the earth with one of their hinder feet ; and thus produce a sound that can be heard a great way by by animals that happen to be near the surface.

Captain George Cartwright has remarked of some English Rabbits, which he took out with him to Labrador, that they had a “ singular way of chewing their cud, if it may be so called, for they very often ate their own dung †.”

Female Rabbits breed five or six times in the year ; they go with young about thirty days, and produce from six to ten young ones at a litter. In consequence of the attempts which the male sometimes makes to devour his offspring, the doe frequently kindles at a distance from the warren. She scratches a small zig-zag burrow about two feet deep ; and at the bottom of this, prepares a warm and comfortable bed for her offspring, by plucking the hair from her own body, and mixing it with grass. The young ones come into the world perfectly blind, and with their ears closed ; and they

* Buffon par Sonnini, xxiv. p. 239, note.

† Cartwright's Journal on the coast of Labrador.

continue thus for ten or eleven days. The dam suckles them regularly every morning and evening, and attends them with the greatest assiduity for six weeks. Whenever she is under the necessity of leaving the nest for the purpose of procuring food, she closes the hole, by means of her hinder parts, so very artificially, with earth, as even to render the aperture difficult to be found. At the end of about three weeks, when the young are able to go out and feed on the grass, she ventures to leave the hole open: after six weeks, she conducts them to the warren, and they are then out of danger from the male. These animals are supposed to live to the age of eight or nine years.

It is well known that the fur of Rabbits is a principal substance in the composition of hats. The skins, stripped of their hair, and boiled down, make an excellent size, or glue. The flesh, which is forbidden to the Jews and Mahometans, is a very palatable and delicate food. In order to distinguish a fresh killed from a stale Rabbet, it is to be observed, that the former will be stiff, and the flesh will be white and dry: when the Rabbet becomes stale, it will be limber, and the flesh will have a bluish cast upon it.

The English counties that are most noted for their Rabbet warrens, are Lincolnshire, Norfolk, and Cambridgeshire. Rabbits swarm in the Ork-nies, where their skins form a considerable article of commerce. The Rabbits of these islands are in
general

general grey; and those which inhabit the hills become hoary in winter. With respect to the different kinds of the animals sought after by the warreners of different parts of Great Britain, the *grey Rabbet* was, till late years, the only kind attended to; but at present the *silver-haired Rabbet* is in much request. The fur of the former is cut from the skin, as a material for the manufacture of hats; whereas the skins of the silver-haired kind are dressed as furs, which, it is said, are exported for sale, principally to the East Indies. The colour is a black ground, thickly interspersed with white hairs. The skins of the latter sell for about five shillings a dozen higher than those of the common sort; a sufficient inducement for the preference. Sometimes the skins and carcasses of the common sort are sold together, at the average price, for the season, of about two shillings a couple: the carcasses only, in the neighbourhood of warrens, sell at eight-pence or ten-pence a couple*.

Rabbits were not originally natives of Great Britain; though they have now, for many centuries, been known in this country, both in a wild and a domestic state. They are found in nearly all the southern parts of the continent of Europe, in Asia, and in many countries of Africa. It is

* Daniel's Rural Sports, i. p. 347.

supposed that they were first introduced into our island from Spain.

THE DOMESTIC RABBIT*.

PERSONS who breed tame Rabbits must be careful to keep them at all times very clean; and, during the breeding season, they must keep the bucks and does apart, till the latter have kindled. The best food for the animals is the shortest and sweetest hay that can be had, of which one load will serve two hundred couple of Rabbits for a year. Tame Rabbits are subject to two diseases, which frequently carry off great numbers. These are the *rot*, and a sort of *madness*. The former is the consequence of too much green food, or of such as is gathered with the dew, or rain, hanging in drops upon it. Dry food is considered as the best remedy for this distemper. Their madness, in which they wallow and tumble about, with their heels upwards, is supposed to be owing to the rankness of their feeding; and the general cure

* For the description of the Domestic Rabbit, see the Synopsis, p. 53, No. 34.

is to keep them low, and give them the *tare thistle* to eat.

It has been remarked, that, when a warren is attempted to be stocked with *domestic Rabbits*, both they and their offspring continue to live upon the surface; and that they never begin to dig holes for protection, till they have endured many hardships, and passed through several generations.

An imposition is practised by the game dealers in several parts of France, in selling tame Rabbits for wild ones. It is a well known distinction betwixt these animals, that the former have the hair under the feet of a much lighter yellow than the latter. The dealers, therefore, often singe the feet of tame Rabbits, by which many people are deceived. The deception, however, is easy to be detected by the smell.

The name by which the Rabbit is known in Wales, is *cwningen*: in France, *lapin*: in Italy, *coniglio*: in Spain, *conejo*: in Portugal, *coelho*: in Germany, *kaninichen*, *koniglen*: in Holland, *konyn*: in Sweden, *kanin*: in Denmark, *kanine*: in Austria, *kunighaze*: in Poland and Russia, *krolek*.

PECORA.

OF DEER IN GENERAL.

ALL the species of Deer delight in forests and extensive tracts of woodland; and they are much more abundant in temperate, and even cold climates, than in those adjacent to the torrid zone. They have great muscular strength; and are able to bound with such rapidity, as, in level countries, to outstrip most other animals in speed. Their agility in leaping about, even amongst rocks and precipices, is exceeded only by that of the Antelopes. As they are naturally timid, they are to be considered, for the most part, as harmless and inoffensive animals. When, however, they happen to be irritated, they will run at the offender with fury, and endeavour to gore his body with their horns.

These weapons are possessed only by the males. In some of the species they are of enormous size; yet none of them are of more than annual growth. At a particular season they spring out of the head,
and

and expand gradually, till they have attained their fullest extent for that year; when they drop off, and make room for the shoot which is to succeed in the ensuing season. The size of the horns, and the number of branches, augment every year till they have arrived at the largest size that they attain; and, after this period, they expand to the same large size every season. In some species, the horns are rounded through their whole length, and through all their branches; whilst in others, they are palmated, or flattened to a very considerable breadth.

Of the foreign animals belonging to the present tribe, those best known are the Rein-deer and Elk*. The former is a native of Norway, Lapland, and other cold regions of the continent of Europe; and the latter, of deep forests and extensive morasses of various parts of North America. They are each domesticated, and trained to labour as beasts of draught and burthen. The Rein-deer is a species, the character and uses of which are well ascertained. The Elk seems chiefly interesting on account of its enormous size, being by far the largest known animal of its tribe. The Indians who frequent Hudson's Bay, speak, however, of a species of Deer, greatly superior to it in size, which, they

* *Cervus tarandus* and *cervus albus* of Linnæus.

assert, inhabits the country seven or eight hundred miles west of York-Fort; and to which they give the name of Waskesseu. This animal has been said, by some writers of natural history, to be that from which the prodigious fossil horns, (sometimes measuring twelve feet and upwards from tip to tip,) have been produced.

Under each of the eyes of several species of Deer, there is a kind of slit, or lachrymal hole, as it is usually called. This is supposed to be of use in affording the animals a free respiration, when pursued by their enemies.

The flesh of Deer is called *venison*; and is eaten with avidity in every country where the animals are found. Their skin, horns, and hair, are of use in manufactures of different kinds; and, in a commercial view, some of them are highly important.





Red Deer

H. H. H.

THE RED DEER*.

STAG, THE MALE; HIND, THE FEMALE; FAWN, THE

YOUNG.

RED Deer inhabit the mountainous parts of Scotland, and range at full liberty, in herds of considerable numbers. The animals of largest size are those found in the province of Moray; and if the forests there were duly kept, they would be very numerous. Stags are yet observed, almost in a state of nature, amongst the forests and hills of Martindale, in the neighbourhood of Ullswater in Cumberland. They are extinct from the mountains of North Wales; but are yet occasionally to be seen in the New Forest, Hants; in the forest of Exmore; in the woods on the river Tamar, in Devonshire; and amongst the mountains of Kerry, in Ireland.

In early ages, the beasts of chase had our whole island for their range. They knew no other limits than that of the ocean, nor were subjected to the

* *Cervus elaphus*.—Linnaeus. *Le Cerf*.—Buffon.

For the description of the Red Deer, see the Synopsis, p. 54, No. 36.

domination of any particular master. When the Saxons had established themselves in the heptarchy, they were reserved by each sovereign for his own particular diversion. Hunting and war, in those uncivilized ages, were the only employment of the great; since their active but uncultivated minds were susceptible of no pleasures but those of a violent kind, such as, at the same time, gave exercise to the body, and afforded diversion to the mind.

The Saxon kings only appropriated those lands to the use of forests which were unoccupied, and no individuals suffered injury: but, when the conquest had settled the Norman line on the British throne, this passion for the chase was carried to an excess which involved every civil right. Sanguinary laws were enacted to preserve the game; and it was considered even less criminal to destroy one of the human species than a beast of chase. These laws were continued in all their force till the Saxon line was restored, under Henry the Second, when their rigour was immediately softened.

When our barons began to form a power, they claimed a vast, but more limited tract of land, than the Normans had appropriated, for the diversions of the chase; and they were so jealous of any encroachments on their respective bounds, as not unfrequently to make these the cause of deadly feuds. Such was the origin of the fatal day of *Chevy-chase*;

chase; which, though recorded only in a ballad, may, from what we know of the manners of the times, have very probably been founded in truth.

Of fifteen hundred Englishmen,
Went home but fifty-tree;
The rest were slaine in Chevy-chase,
Under the greenwood tree.

And of two thousand Scots, it is related that scarcely fifty-five survived the effects of that fatal day. With respect to the style of hunting at that period, some tolerable idea of it may be formed by observing, that, particularly in the Highlands of Scotland, the chieftains frequently assembled four or five thousand persons of their clan, who drove the Deer into toils, or to the station where they were themselves posted, in order to kill them with arrows or spears. The ballad, before quoted, informs us as to the probable number of Deer that may have been slain in one day.

The gallant greyhounds swiftly ran,
To chase the Fallow Deere:
On Monday they began to hunt,
Ere daylight did appeare;
And long before high noone they had
An hundred fat buckes slaine;
Then having din'd, the drovers went
To rouse them up againe.

But as the pretence of hunting was frequently adopted in order to collect vassals for rebellious purposes, an act of the legislature was at length passed, which prohibited any assemblies whatever of this nature.

In the early reigns, when the *king* had lost a Stag, public proclamation was made in all towns and villages near the place where the Deer was supposed to be concealed, that no person should kill, hunt, or chase him; in order that he might return in safety to the forest. And the foresters were directed to harbour the said Stag, and by degrees to bring him back to the forest. Such recovered Deer was always afterwards called a *Hart royal proclaimed*. In the year 1194, king Richard the First chased a Stag from Sherwood Forest to Barnsdale in Yorkshire, and there lost him. He made proclamation at Tunhill in Yorkshire, and divers other places in the neighbourhood of Barnsdale, that no person should chase, kill, or hunt the said Deer, in order that he might return to his lair in the forest of Sherwood*.

When property became, happily, more divided by the relaxation of the feudal tenures, the hunting grounds also became more limited; and as tillage and husbandry increased, beasts of chase were

* Daniel's Rural Sports, vol. i.

obliged to give way to others more useful to the community. The vast tracts of land before dedicated to hunting, in proportion as the useful arts gained ground, either lost their original destination, or gave rise to the invention of parks.

Very few forests or chases now remain. The four principal ones are Sherwood, Dean, Windsor, and the New forests. The Rev. Mr. White informs us, that in *Wolmer Forest*, Hants, the Red Deer, towards the beginning of the last century, amounted to about five hundred head. He mentions an old keeper, named Adams, (living in the year 1768,) whose ancestors and himself had, for more than a century, enjoyed the head keepership of that forest. This person assured Mr. White, that his father often told him, that Queen Anne, as she was journeying on the Portsmouth road, did not think the forest of Wolmer beneath her royal regard. For she came out of the great road at Liphook, which is just by, and reposing herself on a bank, (smoothed for the purpose,) about half a mile to the east of Wolmer Pond, still called the *Queen's Bank*, saw with great satisfaction the whole herd of Red Deer brought by the keepers along the vale before her.

The Deer stealers, however, soon reduced them; and in the course of not many years afterwards, out of about five hundred, there were not more than fifty or sixty head left. They continued decreasing till the time of the Duke of Cumberland, who, about the year 1736, sent down a huntsman,

and six yeomen prickers, attended by the Stag-hounds, for the purpose of taking all the Deer in this forest alive, and conveying them, in carts, to Windsor. In the course of the summer, they caught every Stag; and in the ensuing winter, carried off also the Hinds, some of which showed such extraordinary diversion, as served the country people for matter of conversation and wonder for years afterwards.

Mr. White saw a yeoman pricker single out a Stag from the herd, and he says that it was the most curious feat of activity he ever beheld. The exertions made by the Horse and Deer, much exceeded all his expectations. Though the former greatly excelled the latter in speed, on the devoted Deer being separated from his companions, he was allowed, as the men called it, law for twenty minutes; when, sounding their horns, the stop-dogs were permitted to follow him, and a most gallant scene ensued*.

These animals, which, when unprovoked, are of a mild and peaceable disposition, generally live in herds that consist of many females and their young, headed by one male. They frequent the wildest and least frequented parts of the forest, browsing on grass, or the leaves and buds of

* White's Works in Natural History, i. p. 29.

various trees. During the breeding season, (in the months of May and June,) the females live apart; nor do they again collect into herds till towards the end of the autumn. They are said to be very delicate in the choice of their pasture; and when they have eaten a sufficiency, they usually retire to some thicket, to chew their cud in security.

The Stag has quick eyes, and an exquisite smell. When listening, he raises his head, and erects his ears. When entering into, or issuing from, a cop-pice or half covered place, he first stops to take a full view round him, and observe if any danger is threatened. Although he is considered a somewhat simple animal, he has both curiosity and cunning. If any person happens to whistle, or call to him from a distance, he stops short, and gazes attentively upon the stranger, with a kind of awkward admiration; and, if he perceives neither Dogs nor fire-arms preparing against him, he goes slowly forward, apparently without concern, and does not attempt to run away. In general, he fears men much less than Dogs; and entertains no distrust of them but in proportion as he is disturbed.

These animals shed their horns every year, in the spring. During the first year, the young ones have no horns, but only a rough excrescence in the place of them, covered with a thin hairy skin. In the second year the horns are straight and without branches: the following year they acquire two antlers, or branches; and they generally have an additional

additional one every year till their sixth, from which time the animals may be considered at maturity. It is about the end of June that the large Stags have the upper part of their head somewhat elongated with the new horns. About this time also their heads begin to itch, and they consequently rub them against the trees, in order to break through the velvety skin which covers the young shoots. At the commencement of August, their head assumes that proper degree of firmness and strength, which it retains through the rest of the year.

It is known that if a Stag be cut before it has attained its horns, these will never afterwards shoot; and, says the Marquis d'Amezaga, a French nobleman of great experience in the chase, if the Stag be cut when its horns are in perfection, it will always retain them. Some persons have conjectured that slender nourishment would greatly retard the growth of the horns of this animal; and a letter which M. de Buffon received from M. le Count de Mellin seems to prove, that if the nourishment be particularly slender, the horns will not grow at all. An old Stag was killed in the grounds of this nobleman in the month of June, 1783, which had no horns. The wretched animal had, some time before, lost part of its under jaw, by a musket shot. The wound was healed; but, from the lean and uncommonly emaciated appearance of the body, it was plain that the animal could have received very little more

more food than was sufficient merely to keep it alive. He says there was not a supply, by any means great enough, to afford matter for the formation of the horns*.

After the animals have cast their horns, they separate, the young ones only keeping together. They remain no longer in deep covert, but seek the beautiful part of the country, and continue among coppices during the summer, and until the horns are renewed. As soon as this is the case, the Stags begin to seek the company of the females. Their neck and throat now swell very much; they exert a loud, and sometimes even terrible cry; and, at this season, seem so transported with passion, that nothing can obstruct their fury. If two Stags approach the same Hind, they immediately contend; and they always continue the combat till one of them is either killed or defeated, and compelled to seek his escape in flight. The oldest Stags are sure to gain the battle, because they are both stronger and more fierce than the young ones. This season lasts for about three weeks, and always ends before the middle of October. The animals are by that time become so lean and weakened, as to require a considerable while to recover their strength. They then retire to the

* Buffon, par Sonnini, xxiv. p. 107—109.

borders of the forest, and graze on the cultivated lands, where they find nutriment in abundance, and where they remain until their strength is restored.

The females go somewhat more than eight months with young, producing their offspring about the latter end of May, or the beginning of June. Each female seldom brings forth more than one young one; and this she always takes care to conceal in the most obscure thickets, not only to preserve it from the attacks of beasts of prey, but even from the observation of the Stag, which otherwise would inevitably destroy it. At this season, the courage of the male seems transferred to the female. She defends it, against the less formidable tribes of enemies, by force; and when the hunter approaches, she even offers herself to his pursuit, in order to lead him from the principal object of her concern. She will fly before the hounds for several hours, and will then return to her fawn, whose life she has thus preserved at the hazard of her own.

Deer, if caught whilst young, will continue, for some time, tame and familiar in confinement; but it is said, by Sonnini, that when they approach towards maturity, they always become violent and ill-tempered, and are then oftentimes extremely furious. In one of the small inclosures in the Botanic Gardens at Paris, there was a Stag, which, after he had gradually pined away for many years,

it was as length necessary to destroy. He would always attempt to run at men or Dogs that came towards his inclosure; and to certain persons he had taken a particular aversion; this he testified by stretching out his head and neck, and turning back his upper lip so as to expose his teeth, whenever they approached. If, in spite of this notice, the person continued to draw near, the Stag advanced, holding down his head and presenting his horns, in order to strike the object of his fury; and, in the fruitless attempt, he always beat himself with great violence against the bars of his inclosure. Even the servants who were accustomed to feed and attend him, could not enter the inclosure without great caution. During the rutting season, when he was most ferocious, he was confined in a smaller apartment than usual; and his food could only be given to him, through an opening made for the purpose, from above.

A young Stag succeeded this animal. He had a Hind placed along with him; and although she continued gentle and very tame, he soon rendered himself formidable. If, however, a Dog happened at any time to enter their inclosure, they each became immediately furious, and attacked him with all their force, the Stag with his horns, and the Hind with her fore feet; and the death of the animal was the almost certain consequence of its imprudence. In a few instances, indeed, it has happened

pened that the Hind became intimidated, and endeavoured to escape. She has been known to make prodigious leaps in attempting, but in vain, to surmount the high barrier of the inclosure*.

Notwithstanding these instances cited by Sonnini, another French writer of authority informs us, that Stags may be so far domesticated, as to be broken into harness. Bomare says, that in Germany he has seen six of these animals in harness, and perfectly tractable to the bit and whip; and that in the year 1770, there were at Chantilly two Stags, which suffered themselves to be harnessed into a small chariot, in which they drew two persons with the greatest quietness†.

The flesh of the Fawn is very delicate eating; and that of the Hind by no means bad: but the flesh of the full-grown Stag has always a strong and disagreeable flavour. The skin, when dressed, is manufactured into breeches, gloves, belts, &c. and forms a very excellent kind of leather. The horns, when full grown, are solid, and are used by cutlers and other mechanics; and from them a volatile salt is extracted, called *salt of harts-horn*.

* Addition à l'article du Daim, par Sonnini. Buff. Sonn. xxiv. p. 147.

† Dictionnaire d'Histoire Naturelle. Art. *Cerf*.





Fallow Deer.

Pub. by W. Dutton & J. Harvey Sept. 1868.

Smaller than the Stag.

In Wales the male is called *carw*, the female *ewig*, and the young *elain*: in France *cerf*, *biche*, and *faon*: in Germany, *hirsh*, *hind*, and *hinde kalbe*: in Denmark, *kronhiort*, *hind*, and *kid* or *hind-kalb*: in Italy the male is called *cervo*, and the female *cervia*: in Spain, *ciervo*, and *cierva*: in Portugal, *cervo* or *veado*, and *cerva*: in Sweden, *kron-hiort*, and *hind*: in Holland, *hert*, and *kinde*.

THE FALLOW DEER*.

BUCK, THE MALE; DOE, THE FEMALE; FAWN, THE YOUNG.

Although these animals are less savage than the Red Deer, yet, when offended, they often become very ferocious. They associate in herds, which sometimes divide into two parties, and maintain obstinate battles for the possession of some favourite place in a park. Each of these parties has its leader, which is always the oldest and strongest buck in the herd. The two chiefs commence the engagement, and the rest follow them. Their com-

* *Cervus dama*.—Linnaeus. *Le Daim*.—Buffon.

For the description of the Fallow Deer, see the Synopsis, p. 55, No. 37.

bats are singular, from the conduct by which their efforts seem to be regulated. They attack with order, and support the assault with courage; mutually assist each other, retire, rally, and never yield the victory upon a single defeat. The battle is daily renewed, till the weakest party are routed, and retire to some secluded part of the park, leaving the victors in possession of the object of their contention.

When the London Volunteers, (several thousand strong,) were reviewed in Hyde Park, in October 1803, the Deer were roused by the unusual assemblage of people, and formed themselves into a kind of close column, near the reservoir, with one buck advanced in front, and two others standing at a distance a few paces behind him. In this position they continued, perfectly steady, for the greatest part of the day. And, when they were disturbed, by the retreat of some of the corps, who marched out into that quarter, they formed themselves again, nearly in the same manner, in another place at a little distance, where they remained till the review was over, and all the people were departed.

In countries where these animals are objects of chase, it is said that they do not, like the Stag, run to a great distance before the Hounds; but that they always seek to escape from the Dogs by stratagem. When hard pressed, they will often plunge into the water.

The Fallow Deer feed on a variety of vegetables
which

which the Red Deer refuse; they likewise browse closer, for which reason they are more prejudicial to young trees. These they often strip in such manner that they cannot recover. The young Deer eat faster, and with greater avidity, than the old ones.

The Does go with young about eight months, and, in the beginning of June, produce one, sometimes two, and rarely three Fawns. These are dropped in some retired place, among fern, or other cover, and hidden from the observation of the Buck, which would otherwise destroy them. The Doe suckles them there for a little while, till they are able to follow her. She feeds on some adjacent spot, in order that, if they should be attacked, she may immediately run to their protection.

For the first year the young one is called, by the park keepers, a *Fawn*, and during that time it has no horns. The second year, if it be a MALE, it is called a *Pricket*, and it has then horns four or five inches in length, but terminated only by a single point. The next horns are longer; they are divided at the top, and have a small antler at the bottom. In this third year the animal is denominated a *Sorel*; and in the ensuing year, when his horns acquire a considerable addition both of length and branches, a *Sore*. When he arrives at his fifth year, he takes the name of *Buck*, and his horns are now of their proper palmated form. In his sixth year

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he is accounted fit to be killed; but if he is suffered to live a year or two longer, he will improve both in flesh and fatness. If the young one be a FEMALE, it is called for the first year a *Fawn*, for the second a *Teg*, and after that it takes its proper name of *Doe*. Such Does as are intended to be killed in their season, are either what have had no Fawns in the preceding summer, or have had these killed and taken away.

The season for killing the *Bucks* is from about the first of July, to somewhat later than the middle of September. That for the *Does*, is from about the middle of November to the middle of February.

Towards the commencement of October the throats of the males begin to swell, and the animals make a noise called *groaning*, which is heard at no other season of the year, and is attended with a singular kind of rattling in the throat. They then associate with the Does; and the oldest and strongest Bucks, becoming masters of the herd, keep the younger ones at a distance. At this period they neglect their food, and in consequence become excessively lean; but it has been observed, that the more they are wasted at this season, the fatter and finer will the venison generally be in the following summer.

The Buck sheds his horns every year, towards the end of April, or the beginning of May, soon after which there are to be seen on the head, (as in the Stag,) two soft, velvety swellings. During the early part of the growth of the horns, nothing
can

can be more soft and tender than these; nor can any thing, at this time, exceed their sensibility, as is evident from the great solicitude which the animal displays to guard them from every kind of injury. In this tender state of the head, if the Buck be attacked, he cannot use it to act either offensively or defensively; and if, during this period, any contention arises among the Bucks, they fight each other by rising erect, and striking with their fore legs. After the horns have broken through the skin, they gradually enlarge, lengthen, and widen at their tops; and when at full growth, the skin, with all its apparatus of vessels, which had served to nourish the horns, being grown useless, is rubbed off by the animal; the impressions of the blood vessels still remain on the complete horn, in the form of so many ramified furrows.

The duration of the life of Fallow Deer has been generally estimated at about twenty years.

Fallow Deer are easily tamed, if they are caught young and allowed a sufficient space to range in; but the Bucks, (though less savage than Stags,) if confined to a small space, such as the inclosures in the Botanic Garden at Paris, always lose their natural mildness. In one of these inclosures, along with several Does, there is a Buck, which was taken when quite young from the wood at Boulogne. For a while it continued very docile, but it afterwards became, in some measure, fierce and wild; though it has not lost all its original gentleness of

disposition, for when called by name, it always approaches the bars of its inclosure. It willingly receives bread when put through these bars; but it seldom fails to run with fury upon men or Dogs who attempt to enter. In the year 1799, a person who came to see the animals of the Menagerie, was foolish enough to put into the inclosure a beautiful little Dog that he had brought along with him. In an instant the Buck tore up the animal's belly with his horns. The owner of the Dog, anxious to rescue him from further mischief, leaped himself into the inclosure. The Buck left the Dog, ran upon the man, threw him on the ground, and lacerated his thigh in a most dreadful manner; nor was it without great difficulty that the keepers were able to save him from the destruction in which his extreme imprudence had nearly involved him.

The strength of this Buck is much greater than what most persons would suppose from his size, and the appearance of his body. The Does that are kept along with him still preserve their native wildness and timidity. They will come to the bars of the inclosure when bread is offered to them; but when they have received it, they always retire with precipitation.

Fallow Deer are not at present found any where in Great Britain or Ireland, in a perfect state of nature. They are, however, kept in the royal forests, and in gentlemen's parks; and no country produces

produces them in such abundance as this. In France and Germany they are by no means common. They seem confined to temperate climates, since none of them are found in Russia, and very few in Sweden. In some parts of Spain they are nearly equal in size to the Red Deer.

About seventy years ago, a variety of the Fallow Deer, called *Menel Deer*, was introduced into England from Bengal. These are of a reddish brown colour, spotted with clear white, and, when arrived at full age, with a large branching head, they are as beautiful animals as imagination can picture. They readily associate with other Deer; and in parks, the owners of which have been able to procure them, they make an highly pleasing contrast with the others, and add great beauty to the general herd.

In Wales the male is called *hydd*, the female *hyddes*, and the young *elain*: in France, *daim*, *daine*, and *faon*: in Portugal, *corza*, and *verdo*: in Italy the male and female are both called *daino*: in Spain, *gamo*, *corza*, *dainö*: in Germany, *dam-hirsch*: in Holland, *dein*, *darchert*: in Austria, *dendd*: in Hungary, *daamwad-bak*: in Denmark, *Damhwrt*, *daa-dyr*: in Sweden, *dof*, *dof-hiort*: in Poland, *lanii*: in Russia, *sterna*.

THE ROE*.

THE Roe is much inferior to either of the other British species of Deer, in dignity, strength, and stature; yet it possesses, in place of these, an abundant share of vivacity, gracefulness, and courage. Its figure is more beautiful and elegant, and its eyes much more brilliant and animated, than those of either the Red or Fallow Deer. Its limbs are more neatly formed; its movements are more precipitate; and it is able to bound and run with at least equal agility and vigour.

When pursued by the hunter, the Roebuck exhibits infinite fleetness and address. It is scarcely possible to hunt him fairly down, since he can continue the course for many hours without exhausting his strength. He is, therefore, seldom to be caught, unless by surprise in the onset. When, however, he finds his first efforts to escape are likely to prove unsuccessful, he returns, and keeps the same track backwards and forwards, till by various turnings and windings he totally confounds the scent. Then, by one enormous bound, he is

* *Cervus capreolus*.—*Linnaeus*. *Le chevreuil*.—*Buffon*.

For the description of the Roe, see the Synopsis, p. 56, No. 38.



Roe Deer.



said to leap aside, lie flat on his belly among bushes or long grass, and suffer the Dogs to pass close by his nose without his offering to move.

The natural disposition of these animals is generally marked by an extreme degree of shyness and timidity; and their constitution and temperament are so delicate, that a continuance of cold weather for a little while longer than usual, will frequently destroy great numbers of them. We are informed that in the hard winter of 1709, the species was almost extirpated from Burgundy; and that many years elapsed before it was restored. In Scotland it is found so difficult to rear the Fawns in confinement, that it has been computed that eight out of ten of those taken from their parents, die before they arrive at maturity*.

M. de Buffon, at different times, reared several; but he was never able to keep them alive more than five or six years. He informs us that they are exceedingly delicate in the choice of their food; that they require much exercise, pure air, and a sufficient space to range about in. For a pair of these animals to live comfortably, they should be allowed, (he says,) the range of a park, consisting of at least a hundred acres. They seldom become either obedient or familiar, since they generally retain a

* Pennant's British Zoology, i. p. 51.

great share of their original timidity: but however tame they may have been rendered, they cannot be trusted. The males, particularly, are subject to dangerous caprices; and if they take an aversion to any persons, they will often suddenly spring upon, and attack them with their horns; the blows from which are sometimes so severe as to throw a tolerably strong man to the ground.

In their wild state, the Roes generally love to range among the hills and in alpine valleys, near the borders of woods, into which they can fly for shelter and security whenever they are pursued by their foes. They do not, like the Red and Fallow Deer, herd together in vast numbers; and are seldom to be found but in small flocks or families, consisting of the two parents and their offspring, or, in the whole, of only from three to five individuals. They seldom or never allow strangers to intermix or associate with them. During the summer months they feed chiefly on grass, but they are likewise very fond of the *stone bramble**; and in winter, when the ground is covered with snow, they browse on the tender branches of the fir and birch trees. When, in the spring of the year, they begin to eat the buds and young leaves of trees, it is said that this food ferments in their stomach, and

* *Rubus saxatilis* of Linnæus.

intoxicates them to such a degree, that frequently they do not know where they are going, and in consequence sometimes approach flocks of cattle, and even the habitations of men*.

The females go with young about five months and a half, and produce their Fawns generally towards the end of April, or the beginning of May. Previously to the time when a female is about to bring forth a new family, she drives off her former young ones, in order to provide habitations and to form societies for themselves. She then retires to some secure place in the woods, concealed from the observation of Foxes, and other predacious animals, and there deposits her progeny. These are two in number, usually a male and a female. In the course of ten or twelve days, when they have acquired sufficient strength to follow her, she brings them to the plains, where they are, for the first time, seen by the Roebuck; and so ardent does his attachment become to them, that when, on any occasion, they are assaulted, he will come forward in their defence, and boldly attack the foe.

When the Roes have attained the age of twelve months, the horns first begin to appear, in the form of two small knobs. The first horns are quite plain. Those of the following year have each a single branch; and at the commencement of the

* Buffon par Sonnini, xxiv. p. 171.

animal's fourth year, the head is complete. The Stag sheds his horns in the spring, and renews them in summer; but the Roebuck does not cast his till the autumn, and they are replaced in winter.

The Roebuck does not bellow so frequently, nor with so loud and strong a voice, as the Stag. The young ones utter a short or plaintive cry, *mi, mi*, whenever they are in want of food. This sound is easily imitated by the sportsman; and the mother, deceived by the call, will often come up almost to the muzzle of his gun*.

The venison of the Roe, in some countries, and at a proper season, is considered to be an excellent and delicate food. For different purposes in manufactures, the hair of the Roe is considered more valuable than that either of the Stag or the Ox, from the circumstance of its not becoming knotty, like the hair of those animals. The horns are used in making handles for knives, and for various other purposes.

These animals inhabit woody and mountainous countries, both of Europe and Asia; and, as some writers have asserted, they are also occasionally met with in North America. In former ages they were very common in many parts of Britain; but the few that now are left in the island are chiefly

* Buffon par Sonnini, xxiv. p. 169.

confined to some districts of Scotland, but particularly to the Highlands. In the lower parts of the parish of Appin, in Dumfriesshire, and particularly on the estates of the Marquis of Tweeddale, and Mr. Campbell of Aird, Roes are found in considerable abundance. Great numbers of these beautiful animals have of late years also resorted for security and good pasture to the extensive woods of Moneymusk, in Aberdeenshire. Formerly they visited the low country only at those times, when, during the deep snows of winter, they could find neither subsistence nor shelter in the forests of Glenavon and Glentannar, and they returned to their residence in those bleak and desolate regions, as soon as the first breaking up of the frost would allow them. They, however, now take their entire residence in the above parish; and it is supposed that, in a short time, even all the inclosures will be stocked by them, without either trouble or expence to the proprietor of the lands.

This animal is called *iwrch* in Wales: in France, *chevreuil*, the female *chevrette*, and the young *faon*: in Italy, *capriolo*: in Spain, *zorlito*, *cabronzillo montes*: in Portugal, *cabra montes*: in Germany, *rehe*, *rehbock*: in Holland, *rhee*: in Hungary, *oz-bak*: in Sweden, *ra-diur*, *rabock*: in Denmark, *raae-buk*, *raa-diur*: in Russia, *koza*, *dikaja*.

OF GOATS IN GENERAL.

THESE animals are to be considered as truly alpine, since, in a wild state, they inhabit those countries only, in various parts of Asia, Africa, and Europe, where the mountains are lofty and precipitous. In activity they almost equal the Antelopes, bounding from crag to crag with fearless intrepidity. "I have seen a Goat dance, and scratch one of its ears with its hind feet, (says, Mr. Gray, with great expression,) in a place where I would not have stood stock still, for all beneath the moon." In these their native wilds, they assemble sometimes in numerous flocks, and browse on the short mountain grasses, the branches of alpine shrubs, and various species of lichen and moss. If they are caught young, and properly trained, all the species may be rendered perfectly tame and familiar.

Goats are easily distinguished from Sheep at first sight, by their horns being more erect, and their body being covered with long, shaggy hair, instead of wool. They likewise differ from those animals in their mode of fighting. The Sheep butt at each other, holding their heads down, running with enormous force, and striking with the front of their horns; whilst the Goats rise almost

Goats.





almost erect on their hind legs, and strike with the sides of their horns.

Only three species of Goats have hitherto been described by naturalists. These are the Common Goat, the Ibex, and the Caucasian Goat*. Of the former there are seven permanent, and very distinct varieties, inhabitants of different parts, chiefly of Europe and Asia. The principal are the Common or Domestic, and the Syrian and Angora Goats.

The flesh of all the Goats is occasionally adopted by mankind for food: but when the animals have attained their full age, this has generally a strong and rancid flavour. The skins are employed in making morocco and other kinds of leather; and the hair, particularly that of the Angora Goat, is manufactured into several valuable articles of dress.

* *Capra agagrus*, *capra ibex*, and *capra Caucasica* of Linnæus.

THE COMMON GOAT*.

SUFFICIENTLY hardy of constitution to sustain itself under almost any temperature of climate, the Goat, in a domestic state at least, is now found in every quarter of the globe. Infinitely stronger than the Sheep, it is able to support the cold, the rains, snows, and storms, of the mountainous countries in high northern latitudes, without injury; and though it thrives sufficiently well even in the neighbourhood of the torrid zone, yet it is amongst the bleak mountains of temperate and cold climates considered to be in greatest perfection. Sprightly and active in the highest degree, it climbs with rapidity the most rugged rocks, often ascending, by a series of enormous bounds, to the summits of precipices so towering and lofty as to appear inaccessible to all animals except those of the feathered tribes. On these heights the Goats are able to stand, or to frisk about with perfect security; and from thence they often fearlessly look down upon the astonished traveller in the vales below. They are so sure-footed, that it is seldom indeed they miss

* *Capra agagrus hircus*.—Linnaeus. *La chevre*.—Buffon.

See the Synopsis, p. 58, No. 39.

the spot to which they bound, though it be at the distance of even many feet.

In a domestic state, its activity of body often renders the Goat a very mischievous animal, since no fence of common height can restrain its wanderings. It frequently makes its way into gardens and cultivated grounds, where it commits much damage, by gnawing and eating the plants, and the leaves of shrubs. To young trees of almost every kind this animal is particularly injurious; for it not only nips off all the buds, but also peels the tender rind, which it eats with great avidity.

Amongst their native wilds, in the mountains, the Goats pick up a sufficiency of food for their full support, even in the midst of apparent barrenness. They eat the different kinds of stunted mountain-grasses and shrubs, particularly wild thyme, and some of the dwarf species of willow: they likewise browse on several kinds of alpine moss and lichens.

Although, in a wild state, the Goat is naturally an animal of shy and timid disposition; yet when once it is domesticated, it seems rather to court than to shun the society of mankind. It will follow persons from whom it has received attention, to considerable distances; and will take food even from the hands of strangers. Whilst young, it is a most sprightly and vivacious creature; and even when it has attained a mature age, it does not altogether lose its sprightliness, although the
shaggy

hair which covers its body, and the long beard which hangs from its chin, give to it a peculiarly solemn figure and countenance. Its disposition, when unprovoked, is, for the most part, sufficiently mild: but its passions are often suddenly roused, and in this case it becomes ill-natured, and butts at the offender with great ferocity.

In some parts of the continent, the Goat is an animal extremely essential to the comforts of the lower classes of the peasantry. Though fed only on the most uncultivated and barren grounds, it affords to them an abundance of milk, butter, and cheese. In highly mountainous countries, the Sheep or Cow are by no means so much within the reach of the cottager's economy as the Goat; nor would these, in such countries, be any thing near so useful or productive.

There are none of our domestic animals which have so powerful, and, at one season of the year, (during the months of September and October,) so fetid a smell as these. It is believed that this odour is a great preventive of disease in Horses; and on this account Goats are generally kept about the stables of inns, and of those persons who have extensive studs.

The female goats usually produce two, sometimes three, and, rarely, four young ones at a birth. Their period of gestation is about eighteen weeks; and their time of breeding is generally from

from the end of February to the beginning of May. In our climates the animals are seldom known to exceed the age of eleven or twelve years.

Their flesh is by no means considered in such high estimation as that of the Sheep; since, to persons unaccustomed to eat it, neither the smell nor the taste are agreeable. In several parts of Wales, however, the haunches are occasionally salted and dried; and in this state they supply the place of bacon. The meat of the spayed Goat, of six or seven years old, is reckoned tolerably sweet and fat. That of the Kid is by far the best of the whole: it is exceedingly rich, and is usually considered more excellent even than Lamb.

The skins of these animals, when properly tanned, are manufactured into gloves, and other articles of dress. There is a way of preparing them by maceration, so as to separate the fine upper pellicle, or epidermis, from the coarse under parts; after which they are dyed of various colours, for different uses. From the skins of Goats is manufactured what is generally called *morocco leather*. The countries most celebrated for this are Turkey, and the Crimea. In the latter, only the red and yellow morocco are prepared; but these, in point of quality, are fully equal to those of Turkey. The best morocco is made of the he-goat's skins. For leather of an inferior quality, and particularly such as is to receive a yellow colour, Sheep's

skins are often substituted*. The reason why Goats' skins have been principally adopted for the manufacture of this leather, is, that they take the dye better, and are susceptible of richer colours, than the skins of any other animals.

As the fleece of the Common Goats is by no means considered so valuable as that of the Sheep, the animals have not hitherto been reared in any part of Great Britain with a view towards deriving emoluments from this. With respect to its excellence, however, we are furnished with some interesting information by Dr. Anderson. This indefatigable observer has remarked, that there are, in England, two varieties of Goats, which are almost equally common. One of these has short, stiff hair; and the other a long, rough and shaggy coat, usually either mottled or wholly of a grey colour, the skins of which are chiefly employed for making soldiers' knapsacks. In the latter variety there is a fine soft kind of wool, which grows at the roots of the long hair. This, it is a curious fact, is hitherto scarcely known to any persons of our country. The inhabitants of many parts of Russia, however, have been long acquainted with it, and for several years back have been in the practice of separating

* Pallas's Travels in Southern Russia, translated by Blagden, iv. p. 264.

it from the hair, and manufacturing it into gloves, stockings, &c. on which they set a very high value. The first specimen of this kind of wool that Dr. Anderson ever saw, was sent to him by a Russian lady, with a request that he would get it woven for her into shawls. The quantity, which, unsorted, did not weigh much more than a pound, was too small to admit of being made into a web by itself: the chain was, therefore, formed of silk, and the woof of fine yarn made from that wool. The fabric was compared with the finest of the Indian shawls; and notwithstanding the hardness of the silk chain, (the wool being infinitely softer than that substance,) it was decidedly more soft and beautiful than any of these. Of the above-mentioned small quantity of wool, three full-sized shawls and one waistcoat were made, all of which were exceedingly admired by every person who saw them. The colour was a dull white; with a delicate, scarcely perceptible glance of red through it. The ingenious narrator of this account informs us, that, if he could have been furnished with a hundred of them for sale, he does not doubt that he should have obtained as high a price as twenty guineas each for the whole. On being sent into Russia, they were deemed a proper present for the empress, who expressed herself greatly pleased with them. Dr. Anderson examined many of the long-haired English Goats, on which he found the very same substance. In some, the quantity was con-

siderable, and in others much smaller; but it was not wholly wanting in any of the animals that came under his inspection. In order to obtain this wool, the practice in Russia is to have the Goats first well washed towards the beginning of summer; and after the fleece is dry, it is combed with a wide-toothed comb, and then with others closer set, which tear out the wool, whilst the long hair remains adhering to the skin. Any hairs that may be accidentally blended with it, are picked out, and it is ready for the hands of the manufacturer. The quantity from a single fleece has not been yet correctly ascertained; but it is probably so small as not to admit of being separated, with a view to profit, in a country like ours, where manual labour of all kinds is so much higher than it is in most other countries. The fact, however, is incontestibly proved, that a variety of the Goat species does, in Great Britain, actually produce a wool of perhaps finer quality than what is yielded by any Sheep whatever*.

The long hair of these Goats, and particularly of the males, is used by peruke makers for their best and whitest wigs. The most valuable of the latter kind of hair is that which grows on the haunches of the animals, where it is longer, and more closely

* Anderson's Recreation's in Agriculture, &c. ii. p. 231.

set, than on any other part of the body. Previously to its being used, it goes through the processes of baking and bleaching.

Goats' milk is considered both thicker, and to have a much richer flavour than that either of the Cow or the Sheep; and, in some situations, especially on ship-board, where the Goat thrives much better than any other animal, it is highly valuable. This creature eats readily almost any sort of refuse vegetables; and is, therefore, in such situations particularly, kept at little expence. The milk is said to give much less cream than that of the Cow, and scarcely any butter; but a very large proportion of cheese, and little whey. It is from this circumstance, that in Switzerland, and other mountainous countries, best adapted to the pasturage of Goats, cheese is the principal produce of the dairies.

The horns of the Goat are frequently used, by country people, for handles to tucks and knives of different kinds. The suet may be made into candles, which are greatly superior in colour and excellence to those made from the suet of Sheep or Oxen.

In Wales the male is called *bwch*, the female *gafr*, and the young *mynn*: in France, *bouc*, *chevre*, and *chevreau*: in Italy, *buco*, *capra*, and *capretto*:

in Spain, *cabran*, *cabra*, and *cabrito*: in Portugal, *cabrane*, *cabra*, and *cabrito*: in Germany, *bock* or *zeigenbock*, *geisz*, and *bocklein*: in Holland, *bok*, and *giyt*: in Sweden, *bock*, *jet* or *geet*, and *küdh*: in Denmark, *buk* or *geedebuk*, *geed*, and *kid*: in Poland, *koziel*: in Russia, *kozel*.

OF SHEEP IN GENERAL.

NOTWITHSTANDING the numerous varieties of the Common Sheep which have been observed in different countries of the world, there are, belonging to the present tribe, not more than three or four well ascertained species: These are the Common Sheep, the Argali, the Pudu, and, perhaps, the Cretan Sheep*; for there is some doubt whether the last animal may be considered as really distinct or not. With respect to the varieties of the Common Sheep, many of them differ widely from each other. Most of them are clad with wool; but there is one, the African Sheep, whose coat is entirely of hair. The greater part have each two horns; but the Iceland Sheep have more than two: and several of the English Sheep, on the contrary, are entirely destitute of these weapons. The African Sheep have long, slender tails; and some of the Sheep of Syria and Barbary have their tails so long, and at the same time so broad and large, that the inhabitants occasionally construct little carriages to

* *Ovis aries*, *ovis ammon*, *ovis pudu*, and *ovis strepsiceros* of Linnæus.

to put under them, in order to prevent them from galling against the ground. One variety, the Fat-rumped Sheep, have two large, fat, and naked hemispherical prominences on their buttocks, and no tail.

In the British islands we know nothing of the manners and habits of life even of the Common species, in a state of nature. In every part, even of the mountainous wilds, and extensive moors, of Wales, Scotland, and Ireland, the animals are all private property; and, in their most distant wanderings, are under the guidance of Shepherds and their Dogs. All kinds of Sheep are partial to dry and open plains, and grassy or heathy hills, in preference either to the shelter of forests, or the towering heights of rocks and precipices. Their favourite food is the short and sweet grasses that grow in these situations, which they crop quite close to the ground. They avoid, as much as possible, morassy places; and are said to require less water than most other ruminating animals. In agility of body, either in running or leaping, they are greatly inferior to Goats. They differ, likewise, from these animals in their mode of fighting. They do not rise, as the Goats do, on their hind legs, but they run directly against each other, full tilt, with their horns.

THE COMMON SHEEP*.

SHEEP, like most other ruminating animals, are gregarious, or fond of associating together in large flocks. Each of these flocks is headed by a leader, which is usually one of the strongest and most powerful of their number. They are not remarkable either for activity or sprightliness in their motions; but, when grazing over an extensive range of open country, where they partake, in some measure, of the nature of wild animals, they are at all times extremely vigilant in guarding against danger. A powerful thump of the foot upon the ground, from any one of them, immediately calls the attention of the rest towards the object of alarm. If this approaches their station, the leader, by a loud hiss or whistle, twice or thrice repeated, indicates his fears, and they all scamper off to some distance. When out of the reach of immediate danger, they halt, face about, and the leader advances some paces in front of the flock, to reconnoitre. If the suspected foe exhibits no evil inclination, by continuing to approach, they

* *Ovis aries*.—Linnaeus. *Le Belier*.—Buffon.

See the Synopsis, p. 59, No. 40.

proceed to graze as before; but if he comes nearer, the same signals are repeated, and a similar flight takes place, but to a greater distance than at first. After about the third repetition, they generally run entirely away.

These animals are supposed to be fond of any jingling kind of noise; and on this account it is that the Shepherds often fasten a bell round the neck of the leader, the sound of which prevents the flock from ranging far from the spot where he feeds. They implicitly follow their leader wherever he goes; but, in case of sudden alarm, if any one of the flock pushes forward to escape, and thus *takes* the lead, the rest generally follow him, and precisely in the same way.

Of this singular disposition, Dr. Anderson informs us, that he once witnessed a very laughable instance in the town of Liverpool. A butcher's boy was driving about twenty fat wedders through the town; but they ran down a street along which he did not want them to go. He observed a scavenger at work with his broom, a little way before them, and called out loudly to him to stop the Sheep. The man accordingly did what he could to turn them back, running from side to side, always opposing himself to their passage, and brandishing his broom with great dexterity. But the Sheep, much agitated, pressed forward; and at last one of them came right up to the man, who, fearing it was about to jump over his head, whilst
he

he was stooping, raised his body erect, and grasping the short broomstick in both hands, held it over his head. He stood for a few seconds in this position, when the Sheep made a spring, and jumped fairly over him, without touching the broom. The first had no sooner cleared this impediment, than another followed, and another, and another, in such quick succession, that the man, perfectly confounded, seemed to lose all recollection, and stood, in the same attitude, till the whole had jumped over him, not one of them attempting to pass on either side, though at the sides the street was quite clear. As this took place during wet weather, the man was entirely bespattered over with dirt before they had all passed; and it is impossible to conceive a more ludicrous appearance than the poor fellow made on the occasion*.

The bodies of Sheep, instead of the hair usual on other animals, are clad by nature with a kind that is almost peculiar to themselves, called *wool*. This is so curled as to be closely matted together; and, when pulled strait, it is from four or five lines, to twelve or fifteen inches, and upwards, in length. The distinguishing characteristic of wool is this, that when even the coarsest sort is manufactured into cloth, it thickens in the milling, and forms a close texture; whereas the finest possible hair, under the

* Anderson's Essays in Agriculture. &c. iii. p. 366.

same operation, will neither thicken nor form any texture whatever.

It is from the manufacture of this wool into various kinds of clothing, that many thousands of people, in different countries of Europe, are entirely supported and fed. In temperate countries it is shorn or cut off once, and in others, where the climate is warmer, twice in the year. Previously to the shearing, the Sheep are driven to some neighbouring river, or stream, to be washed. The conducting of the animals from the folds, for this purpose, by the shepherds, has been well described by Thomson.

“ Rushing thence in one diffusive band, they
Drive the troubled flocks, by many a dog
Compell’d, to where the mazy-running brook
Forms a deep pool; this bank abrupt and high,
And that fair spreading in a pebbled shore.
Urg’d to the giddy brink, much is the toil,
The clamour much, of men, and boys, and dogs,
Ere the soft, fearful people to the flood
Commit their woolly sides.”

After the Ewes and Lambs are shorn, there is a great confusion and bleating, neither the dams nor young ones being able to distinguish each other as before. This embarrassment does not seem so much to arise from the loss of the fleece, which may occasion an alteration in their appearance, as from a defect of that *natus odor*, or native smell, by which each individual is personally discriminated,

criminated, and which is now confounded by the strong scent of the tar that is used in marking them. The brute creation certainly recognize each other much more from the smell than the sight; and, in matters of identity and diversity, they appeal greatly more to their noses than their eyes. In the present case, the voice is exerted to supply the defect; and the young animals are not long before they are able to ascertain their parents, and the parents their offspring, by the test of this.

With respect to the services of these animals to mankind, it has been frequently remarked, that there is no part of the Sheep but what is applied to some useful purpose. The wool, as I have already observed, furnishes sources of industry and wealth to many thousands of people; and it serves to clothe, and protect from cold, both the labourer and the prince. The flesh supplies us with an highly wholesome and palatable nutriment; and the milk is in great esteem amongst the peasantry of all countries where Sheep are bred. This, however, (though not deficient in thickness,) is said to yield but little cream; and that cream gives butter of a quality greatly inferior to what is obtained from the milk of Cows. But it is to be remarked, that the same measure of Ewes' milk will yield double the quantity of curd that our Cows' milk affords. The skin, when stripped of the wool and tanned, is in great request, particularly by
bookbinders

bookbinders and saddlers. Of the entrails are made the strings called *catgut*, which are used for different kinds of musical instruments.

The season at which the Ewes begin to produce their offspring, commences generally a little after Christmas. The number of young, in the British islands, is seldom more than one or two; but there is, in the Netherlands, a peculiarly large breed of Sheep, the Ewes of which produce three, often four, and sometimes as many as five Lambs at a birth. The period of gestation is twenty-three weeks; and the age of the animal is seldom known to exceed fourteen or fifteen years.

Sheep are liable to various diseases, such as rot in the liver, the foot-rot, staggers, scab, and others. Some of these are so severe, as, when very prevalent in the flocks, to destroy considerable numbers of the animals in a season. The *rot* is considered one of the most dangerous. It is a decay in the liver, occasioned, as many naturalists have asserted, by a kind of flat worms, in shape not unlike the seeds of a gourd, which the farmers call flukes or flounders*. The glandular viscera of these animals are likewise infested by two or three species of *tænia*; and in particular by one, *tænia granulosa*, the vesicles of which are from the size of a hazel nut, to that of a hen's egg, and often contain many

* *Fasciola hepatica* of Linnæus.

thousands of animalcules, so small as to be scarcely visible to the naked eye. The *tænia cerebialis*, that is found in the brain, or in the spinal marrow immediately below the brain, occasions giddiness and staggering, and the disease called *dunt* or *rickets*, which, if the vessel happen to be broken, is said to be incurable. The latter kind, which chiefly attack yearling Lambs, are each not larger than a grain of sand. A species of gadfly*, in the summer time, deposits its eggs on the inner margins of the nostrils of Sheep, occasioning them to shake their heads violently, and thrust their noses into the gravel. The larvæ, or grubs, when hatched, crawl up into the hollows of the forehead, called the frontal sinuses, where they undergo their necessary changes; and then descend, through the nostrils, to the ground, in which they bury themselves, and are at last transformed into flies similar to those from which they were produced†.

The

* *Cestrus ovis* of Linnaeus.

† The general name of the male is *ram* or *tup*. From the time he is weaned to the first clipping or shearing, he is called *hog*, *hoggerel*, or *lamb-hog*; after that he is a *shearling*, *shearing*, *shear-hog*, or *dinmond tup* or *ram*. Then, according to the year in which he is clipped or shorn, he is called *two-shear ram*, *three-shear ram*, and so on.—If the male be emasculated, he is called, whilst sucking, *wether-lamb*, then *wether-hog*, until he is shorn, when he takes the name of *shearling*, &c. till shorn a second time, when he is a *young wether*, or *two-shear wether*, then *three* or *four-shear wether*, or more, according to the times

The following are the principal varieties of British Sheep.

** Hornless Sheep.*

*** Horned Sheep.*

- | | |
|-----------------------------|----------------|
| 1 New Leicester, or Dishley | 9 Dorsetshire. |
| 2 Lincolnshire. | 10 Wiltshire. |
| 3 Teeswater. | 11 Exmoor. |
| 4 South Down, or Sussex. | 12 Norfolk. |
| 5 Ryeland or Herefordshire. | 13 Heath. |
| 6 Herdwick. | 14 Irish |
| 7 Cheviot. | |
| 8 Shetland. | |

times he has been shorn.—The female has the general name of *ewe*. Whilst sucking she is called *ewe-lamb*, or *gimmer-lamb*; but when weaned, *ewe-hog* or *gimmer-hog*, until clipped or shorn for the first time, when she takes the name of *gimmer*, which continues only for one year, till she loses her fleece a second time, when she obtains the general appellation of *ewe*. Her age is marked by being called a *two shear*, *three-shear*, or *four-shear* ewe.—What are denominated *gimmers* in the North, are, in many of the midland parts of England, called *theaves*; and when twice shorn, *double-theaves*.—In some parts the male lambs are called *heeders*, and the females *sheeders*. In others, hogs are called *tegs*, and two-years-old ewes, *twinters*; and and three-years old, *thrunters*. CULLEY'S OBSERVATIONS ON LIVE-STOCK, INTRODUCTION, p. 19.

In Wales the male is called *hwrd* or *maharen*; the female, *davad*; and the young, *sen*: in France, *belier*, *brebis*, and *agneau*: in Italy, *montone* or *ariete*, *pecora*, and *agnello*: in Spain, *carnero*, *carnero cutero*, *carnero cajudo* or *moruéo*, *oveja*, and *cordero*: in Portugal, *carneiro*, *ovelha*, and *cordeiro*: in Germany, *widder*, or *scaafbock*, *schaef*, and *lamm*: in Holland, *ram*, *schaep*, and *lam*: in Sweden, *vadur*, *fuur*, and *lamb*: in Denmark, *vædder*, or *være*, *faar*, and *lam*: in Norway, *soud*: in Poland, *owca*: in Russia, *baran*, *owen*.

** Hornless*





Howell

New Leicester or Dishley Sheep.

* *Hornless Sheep.*

THE NEW LEICESTER OR DISHLEY SHEEP.

THESE Sheep are hornless, and have white faces and legs, and long, fine wool. Their head is narrow. They have fine lively eyes; and their ears, which are soft and thin, stand backward. Their back is flat; and their body round, and barrel-like. Their pelts are thin, and all their bones peculiarly slender. The staple is usually about six inches in length. The weight of the fleece is seven or eight pounds, and its value somewhat less than a shilling a pound. The weight of the wool, to that of the carcass, is in proportion nearly as one to eighteen and a half. When the Ewes are three or four years old, they generally weigh from eighteen to thirty-six pounds; and the wethers of two years old, from twenty to thirty pounds, per quarter.

This breed was first introduced by Mr. Bakewell, of Dishley, near Loughborough; and he is supposed to have obtained it by crossing the coarse and heavy *old Leicester* breed with the Ryeland. It has, for several years, been in such esteem, in the midland counties, as, in several districts, to have excluded all others. Such, indeed, has been the rage

C c

amongst

amongst graziers for this breed, that one of Mr. Bakewell's Rams brought its proprietor, in a single season, upwards of eight hundred guineas.

These animals are chiefly celebrated for their quick feeding, and their capability of being rendered enormously fat; so much so, as, in some instances, to take away the proper flavour of the mutton, and to render it scarcely eatable. A three-years old wether belonging to Mr. Culley, which was killed at Alnwick, in October, 1787, measured more than seven inches of solid fat on the ribs; and his back, from head to tail, was like the fattest bacon. It is very common for two-years old wethers to have four inches, in thickness, of fat on the ribs; and from two to three inches all down the back. This is frequently the case even with Ewes which have bred and suckled Lambs till July, and have been killed about the Christmas following; and, although the Dishley Sheep are not celebrated for much tallow, yet Ewes, under such circumstances, generally produce from eighteen to twenty-four pounds each. When the animals are not over fatted, the mutton is not only peculiar for fineness of grain, but for superiority of flavour, beyond all other kinds of large and long-woolled Sheep. The Ewes, when fat, are generally sold to the butchers at the price of from thirty-four to forty shillings; and the two-shear wethers, from forty to fifty shillings, per head.

The breeders of these Sheep find, that the
average

average of one third of the Ewes produce two Lambs each; that is, every three Ewes will have about four Lambs. Hitherto the wool produced by these Sheep has not been much attended to: the quantity, however, is by no means so great as what some others of the long-woolled Sheep produce.

THE LINCOLNSHIRE SHEEP.

Are amongst the largest of all our breeds. They are hornless; have white faces and legs; long, thin, and weak carcasses; and long, heavy wool. The latter, when extended, usually measures from ten to eighteen inches; and a specimen examined by Sir Joseph Banks, Bart. was twenty-one inches, in length. The fleece from which this specimen was taken weighed no less than twenty-eight pounds. The average weight of the fleece is from eight to fourteen pounds, and is in proportion to that of the carcass, as about one to sixteen and a half. Its value is from eight-pence halfpenny to a shilling a pound. The pelt in these Sheep is thick; and the legs are rough, clumsy, and large boned.

It is in the rich marsh lands of Lincolnshire that this breed is chiefly prevalent. Its principal value is in the wool, since the animals are a slow-feeding

race, and afford a coarse-grained and very inferior kind of mutton, which is no where in repute. The weight of the Ewes is from seventeen to twenty-four, and of the three-years old wethers, from twenty to thirty pounds, per quarter. Mr. Culley informs us, that these Sheep cannot be made fat, in a reasonable time, in any part of our island, except Romney Marsh, the marshes of Lincolnshire, or some other very rich grazing grounds. In such situations they are considered to be profitable, from the enormous weight of wool which they annually produce.

It is said that the Lincolnshire Sheep are, in general, so tender as to be unfit for more northern districts. Of late years, the race has been much improved, by the breeders introducing among them valuable Rams from other counties.

THE TEES-WATER SHEEP.

THIS is a hornless variety, with white faces and legs, and long and somewhat coarse wool. The animals are considered to be the largest of all the British Sheep. Their legs are longer, and finer boned; and the carcasses are heavier, more firm, and much wider on the back and sides, than those of the preceding breed. Their wool also is shorter, and not so heavy.



Tees-water Sheep.

Howell.



As the present Sheep are not held in much esteem, either for their wool or mutton, although the latter is, in every respect, better than that of the Lincolnshire Sheep, they are rarely to be found *pure*, except in the possession of some of the old breeders. There are now very few flocks that have not been crossed, more or less, with the Dishley blood, by which they have been essentially improved.

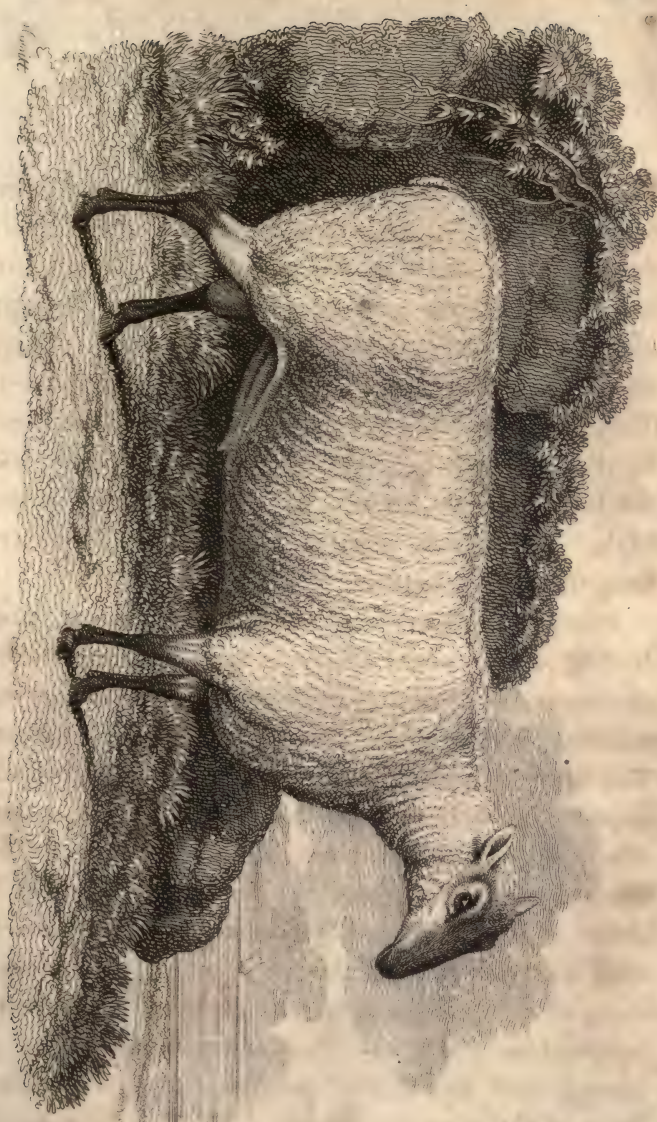
The weight of the two-years old wethers, of the Tees-Water Sheep, is from twenty-five to thirty-five pounds per quarter; and the four quarters of a four-years old wether, have been known to weigh nearly two hundred and fifty pounds. The fleece is generally about nine pounds in weight; and the value of the wool, at an average, about a shilling a pound.

These Sheep are not adapted to live in numerous flocks, or upon bare pastures. They require to be kept on good ground, to be depastured in small parcels, and to have great indulgence in the winter. The Ewes are very productive, frequently bringing two, and sometimes three, Lambs at a birth. Instances have occurred of their producing four, and even five. Mr. Eddison had a Ewe which yeaned sixteen Lambs in four years, and of these the first nine were lambed within eleven months.

THE SOUTH DOWN OR SUSSEX SHEEP.

THE districts where these Sheep have been chiefly bred, consist of dry, chalky downs, which produce a short and fine herbage. The animals are hornless, and have grey or speckled faces and legs; and peculiarly fine, close, and short wool. Their bones are small, and their neck long and slender. They are low before, high on the shoulder, and light in the fore-quarter. The sides are good, and the loin tolerably broad; but the back-bone is too high. The hind quarters are generally heavier than the fore quarters.

Butchers are partial to South Down Sheep, preferring them to the Dishley breed, from the circumstance of the latter showing all their fat on the outside, whilst these are always fatter within. The mutton is considered to be, in every respect, superior in delicacy and flavour to that of other Sheep bred in the southern parts of England. The average weight of the two-years old wethers is about eighteen pounds per quarter: they are seldom kept beyond this age; and many persons feed them at eighteen months. The Ewes are chiefly sold at four years' old, to graziers in the welds of Sussex and Kent, who fat both the Lambs and Ewes in the ensuing summer. Graziers from other counties,



South Down Sheep.



counties, and particularly from Norfolk and Suffolk, have, of late years, purchased immense numbers of South Down Sheep. The Wiltshire downs and Salisbury Plain, are also now nearly covered with them, to the almost entire exclusion of the great Wiltshire Sheep.

These Sheep are both hardy and ready feeders; and thrive extremely well, both in hilly and pasture lands. Their fleece, which, as before stated, is short and peculiarly fine, seldom exceeds the weight of two pounds and a half, or three pounds; and its average value is from one shilling and ten-pence to two shillings a pound. Its weight, in proportion to that of the carcass, is about as one to forty-one and a half.

The Ewes produce their Lambs generally betwixt the middle of March and the end of April; and these, when dropped, are, for the most part, well covered with wool.

In the writings of the Rev. Mr. White of Selborne, there is a very remarkable observation respecting the Sheep, which, in 1769, were fed on the downs of Sussex. He informs us, that from the westward, as far as the river Adur, all the flocks had horns, smooth, white faces, and white legs; and that a hornless Sheep was scarcely to be seen. But as soon as that river was passed, to the eastward, and the traveller arrived at Breeding Hill, he would see that all the flocks were, on a sudden, hornless or

C c 4 polled;

polled; and, moreover, that they had blackish faces, with a white tuft of wool on their foreheads, and speckled or spotted legs. Thus, (as he remarks,) one might almost suppose that the flocks of Laban were pasturing on one side of the river, whilst the variegated breed of his son-in-law were cantoned along the other. And this diversity held good, respectively on each side, from the valley of Bramber and Breeding, to the eastward; and westward, all the length of the downs. If any one talked with the shepherds on the subject, he was informed, that this had been the case from time immemorial; and they would smile at his simplicity, if he asked them whether the situation of these two different breeds might not be reversed. An intelligent friend of Mr. White's, at the hazard of being laughed at by all his neighbours, determined to try the experiment, and, in the autumn of 1769, introduced some black-faced hornless Rams amongst his horned western Ewes. It is scarcely necessary, in this place, to add, that his experiment fully succeeded*.

* White's Works in Natural History, i. p. 278.

THE RYELAND OR HEREFORDSHIRE SHEEP

Are of small size, hornless, and have a white face, and white legs; and very fine short wool. Their carcasses are tolerably well formed, and weigh from ten to eighteen pounds per quarter. This breed have the name of Ryeland Sheep, from the land on which they were chiefly fed, being formerly thought capable of producing no better grain than rye. It was considered a tract of very poor land, but it is now found capable of producing almost any kind of grain.

The fleece of the Ryeland Sheep, which seldom exceeds the weight of a pound and a half, or two pounds, is so short, soft, and fine, that whilst the breed continued unmixed, they were considered to bear the finest wool of any British Sheep. The filaments of the wool are as fine as those of the Spanish breeds; but they are more irregular as to size and surface, and consequently rougher; neither does this wool felt well. It is, however, supposed to make the finest cloth of any English wool. This superiority has been long acknowledged. Old Drayton, who wrote about two centuries ago, celebrates it under the appellation of "Leominster Ore."

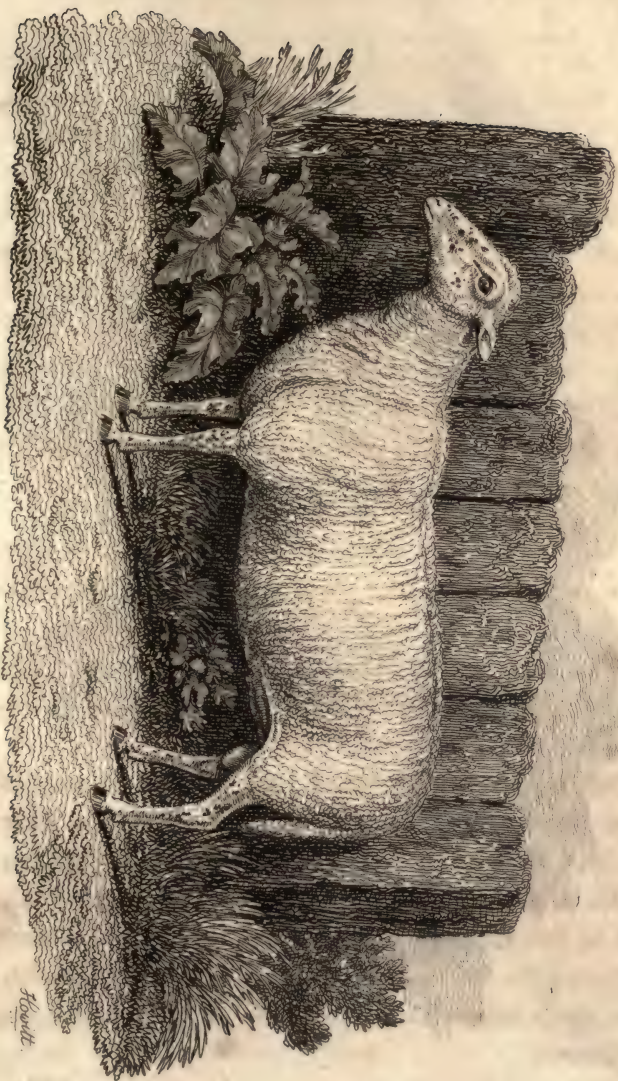
“Where lives the man so dull on Britain’s farthest shore,
 To whom did never sound the name of Lemster ore;
 That with the silkworm’s web for smallness doth compare.”

From the late rage for the new Leicester Sheep, this breed has been so much intermixed with them, that they are now become very scarce. Since the introduction of the Merino Sheep into this kingdom, by his present majesty, Ryeland Ewes, of the pure breed, have been in great request, to put with the Merino Rams; not on account only of the fineness of their wool, but likewise on account of their good shape, excellent mutton, and ready disposition to fatten. The value of the wool is about two shillings and four-pence per pound; and its weight, to that of the carcass, is as about one to thirty-four and a quarter.

THE HERDWICK SHEEP.

THIS is a mountain breed, and chiefly known in those parts of Cumberland which are situated near the head of the rivers Duddon and Esk. The few farms where they are bred are called Herdwicks, that is, the districts of the Herds, from the circumstance of the Sheep having, from time immemorial, been there farmed out, to herds, at a certain sum per annum.

The



Herdwick Sheep.



The Herdwick Sheep are hornless, and have speckled faces and legs, and short wool. Those, however, are considered to be of the purest breed, which have only a few black spots on their faces and legs. Their fleece is thick and matted, and does not often exceed the weight of two pounds, or two pounds and a half. The wool is coarser than that of any of the other short-woolled breeds. The Ewes generally weigh from six to eight pounds, and the wethers, at four years and a half old, from nine to eleven pounds per quarter. Their legs are fine, small boned, and clean.

These are active and lively little animals; and so hardy, that they can support themselves during the severest storms, and deepest snows, in winter, without any other food than what they are able to obtain, either by scratching their way through the snow to the scanty herbage which it conceals, or by seeking out situations where the winds have left the herbage exposed. So long as the severe weather continues, they generally collect together, and, by continually moving about, tread down the snow, and thus are seldom lost by being overwhelmed in the drifts. In every respect they are animals admirably adapted to an alpine country. Mr. Culley is of opinion that this breed has been crossed by the Heath Sheep, from the circumstance of a few of the Rams having small horns, and from some kempy hairs being intermixed with the wool.

The Ewes generally produce their offspring about the beginning of May; and the Lambs, when dropped, are well clad with wool. The former are kept as long as they will breed, and are frequently from ten to fifteen years of age, when sold. The wethers, which are usually killed at the age of four years and a half, are allowed no other pasture for fattening them than their native mountains.

THE CHEVIOT SHEEP

Are hornless; have usually white faces and legs; and fine, short wool. Their eyes are prominent and lively, and their countenance open and animated. Their body is long, and their legs fine, clean, and small-boned. In their fleece, which usually weighs about three pounds, there are two pounds of fine wool, and about one of coarse. The weight of the carcass, per quarter, when fat, is from twelve to eighteen pounds.

The country in which the Cheviot Sheep are principally found, is the hilly district of the north-west part of Northumberland; and they do not extend much farther south than Reedwater. They are bred on all the hills around Cheviot, from which they have their name; but on that barren mountain itself there are no Sheep whatever.

This is an highly excellent mountain breed, the
wool



Cheviot Sheep.



wool of which is of valuable texture, and the mutton in the greatest esteem, on account of its flavour. The animals thrive on the most sterile heaths; and are capable of supporting all the severities of winter, with no other food than what the heaths produce, except during the deep snows, when they are occasionally supplied with hay.

Great improvements have, of late years, been made in the Cheviot Sheep; and from the success with which these have hitherto been attended, there is reason to hope that the remaining defects, particularly in the wool, in the fore quarter wanting depth, and in that and the chine wanting a suitable degree of width, will, by due care, be soon corrected.

The breeders of these Sheep do not suffer the Ewes to produce young till they are three years old; and a year and a half afterwards they are sold to graziers, who feed both them and their Lambs in the following summer. The wethers, at the age of three years and a half, are sold for about four and twenty shillings each; and, after being kept near twelve months on grass, they leave a profit of from ten to twelve shillings each.

It has been an old and general, but to the animals certainly an injurious practice, to milk the Ewes of this breed for eight or ten weeks after the Lambs are weaned. From this milk, great quantities of cheese are made, which is sold at a low price. This, when three or four years old, becomes exceedingly
 pungent;

pungent; and, on that account, it is, by many persons, much esteemed.

THE SHETLAND OR KINDLY SHEEP.

In the Shetland Islands there is a breed of Sheep distinguishable from all others by their small size, their peculiarly fine and soft wool, and remarkably short and small tails. They are hornless, and vary considerably in colour. The usual weight of these animals, after they have attained their full growth, is from thirty to forty pounds. The whole present stock of the islands is estimated at about seven thousand.

Few animals are more hardy than these; and, in winter, when the ground is covered with snow, sometimes for months together, they have little else to subsist upon but sea weeds. They watch the falling of the tide, and as soon as the rocks, covered with marine plants, begin to be exposed, the Sheep, in large flocks, descend to the shores; where they continue to feed till the return of the tide compels them to seek their former haunts.

With respect to their wool, it is of a texture so soft and cottony, that it is adapted to the finest manufactures; and, in some instances, has been found to rival even the Spanish wool. According to an account inserted in the Bath Society's papers,
stockings

stockings have been manufactured of this wool, which were so fine as to sell for six guineas a pair. For softness and lustre, no wool has hitherto been found to equal it; and the skin, with the fleece on, is capable of being converted into a fur of great value. Several specimens have already been exported from this country to China. The silver-grey wool is generally considered to be the finest and most soft; but the black, the white, and the brown, are very little inferior.

The fleeces of these Sheep are liable to be rubbed off their bodies during winter, or early in the spring. This, it is supposed, might be prevented by clipping the animals in the way that is usual in England, instead of pulling off the wool in the barbarous manner now practised.

The skins of the Shetland breed, after the wool has been separated, sell for double the price of other Sheeps' skins, of the same size; because it is found that, for the purpose of leather aprons, for a particular class of mechanics, they are not only pleasanter in the wear, but also that they last much longer than any others. This, says Dr. Anderson, is a fact known to every inhabitant of Shetland; and hence, not less than on account of the softness of their fleece, it is, that, by common consent, the Sheep have obtained the name of the *kindly breed*.

**** *Horned Sheep.***

THE DORSETSHIRE SHEEP

Are, for the most part, horned; and the horns are round and small. These animals are tall and light in the body, and have white faces and legs, and short wool. Their head is rather long than otherwise. The shoulders are broad at the top, and lower than the hind quarters. The loins are broad. The back is tolerably strait, and the carcass deep. The weight of the fleece is generally about three pounds and a half, and its value from sixteen to eighteen pence per pound: the staple does not usually exceed the length of two inches.

For various qualifications, these Sheep have been considered amongst the most valuable which the British islands produce. The Ewes are very prolific; are remarkable for yeaning early, and, not unfrequently, twice in the season. It is from this circumstance, that in the London markets, the first, and the highest priced house-lamb, is the produce of this breed. But it is a property of these Sheep, which renders them peculiarly advantageous, that they may be caused to lamb at any season of the year. After the Lambs are produced, they are confined in little dark cabins, and never see the
light,

light, except when the shepherd suckles them upon the Ewes. The Ewes are kept in an inclosure contiguous to the lamb apartment; and, at proper times, the Lambs are brought out to them for the purpose of being fed. During this, their lodgings are made perfectly clean, and littered with fresh straw; since a great part of their value depends upon the cleanliness in which they are kept. The mutton of this breed is fine grained, and well flavoured. It is considered to be of an excellent medium betwixt the delicate mutton of the Welsh and Scottish hills, and the rich and juicy meat of the lowland Sheep.

The Dorsetshire Sheep have, of late years, been successfully introduced into several counties of the north of England; and, at the present day, the cities of York and Durham, and the towns of Newcastle and Edinburgh, are nearly as well supplied with Christmas house-lamb, as any parts of the south.

THE WILTSHIRE SHEEP

Are, in many respects, nearly allied to the Dorsetshire breed. They have long white faces and legs. Their horns lie backward, almost close to the neck, and encircle the ears. The wool is short and close, but by no means fine; and there is very

D d little

little wool under the belly. The legs are long and large-boned.

The mutton of these Sheep is really excellent, when fat; but the expence of fattening the animals, which cannot be done except on good land, is so great, that the breed is going entirely out of estimation. It is certainly an unprofitable stock, both to the farmer and the grazier; and its place is well supplied by the South Down Sheep. The weight of the fleece is from three pounds and a half to four pounds and a half; and its value about ten-pence per pound.

THE EXMOOR SHEEP

Have horns, white faces and legs, and long wool. Their head, neck, and bones, are peculiarly small and delicate; but the form of the carcass is not good, being narrow and flat-sided. The weight of a wether, at two years and a half old, is from fifteen to eighteen pounds per quarter. That of the fleece is usually about six pounds.

It sometimes happens that Lambs are produced without horns; but these are never kept for breeders, from an absurd notion that they are more tender than such as have horns. These Sheep have their name from being chiefly bred in the vicinity of Exmoor, an extensive tract of forest land on the confines of Devonshire and Somersetshire.





Heath Sheep.

H. Smith.

THE NORFOLK SHEEP.

THE Sheep of the present breed have large, spiral horns, with black faces, and black or dark-grey legs. The legs are long and large boned. The wool is short and fine, the fleece seldom weighing more than about two pounds. The carcass is very small, long, thin, and weak, with a narrow chine; and the weight, per quarter, from sixteen to twenty pounds. The mutton is good; but, in hot weather, it does not stiffen well: and it taints sooner than that of most other Sheep.

This breed, which is most prevalent in Norfolk and Suffolk, like the Wiltshire, seems to have no very peculiar excellence, and numerous defects. They devour an immense quantity of food; and are of a disposition so restless, that it is difficult to keep them in any other than the largest sheep-walks, commons, or fields.

 THE HEATH SHEEP.

THESE have large spiral horns, black faces and legs, and an unusually fierce and wild looking eye. Their wool is long, open, coarse, and shagged,

weighing generally from three to four pounds per fleece. The carcass is short and firm, and weighs, on an average, from twelve to sixteen pounds per quarter.

The range of country in which the Heath Sheep are chiefly found, is the mountainous tract adjoining upon the Irish Sea, from the county of Lancaster, to Fort William in Scotland. They are a wild, active, and hardy race; run with amazing agility; and are excellently adapted to subsist in heathy and mountainous districts. They are not often fed, till they are from three to five years old; and at this age they feed well, and their mutton is accounted peculiarly excellent.

Although considerable improvements have, of late years, taken place in this breed of Sheep, there is yet room for much to be done with respect to the quality of the wool. By judicious crossings with the best of the fine-woolled breeds, the Heath Sheep may eventually become an highly estimable kind. The three principal fairs for these Sheep are, Stagshaw-bank, in Northumberland; Brough, in Westmoreland; and Linton, in Scotland: at all which places they are every year sold in astonishing numbers.

THE IRISH SHEEP,

As we are informed by Mr. Culley, who saw, at the great fair of Ballinasloe, as many as 95,000, are, in general, so ill-formed and ugly, that the worst of the breeds in Great Britain are much superior to them. They are of great size, and supported by long, thick, crooked, grey legs. Their head is long and ugly, with large flagging ears, grey faces, and sunk eyes. The neck is long, and set on below the shoulders. The breast narrow, short, and hollow before and behind the shoulders. The animals are flat-sided, with narrow herring-backs; their hind quarters droop, and the tail is set low. In short, they seem, in almost every respect, to be the very reverse to what well-formed Sheep should be. By the exertions, however, of Mr. French, and a few other spirited breeders, who, at great expence and hazard, have imported Rams from England, great improvements in the Irish Sheep have lately taken place. And, from the emulation which has been excited by their success, it is to be hoped that the original breed will soon be entirely extirpated.

OF OXEN IN GENERAL.

ALTHOUGH, in their native savannas or plains, the greater part of these animals are exceedingly wild and savage, yet there are few altogether incapable of domestication; some are trained to labour, and supply the place of horses, as beasts of draught and burthen. The flesh and milk of every species are considered as wholesome food; and the fat, horns, bones, and hair, are all convertible to purposes of utility.

In a wild state, some of the species inhabit low and rich pastures and plains; whilst others delight in swamps and morassy grounds: and one, the Musk Ox*, resides amongst the mountains and rocks of North America, which it is able to ascend with great agility. But most of the species, from their large and unwieldy bodies, are ill adapted to mountainous countries; though they are oftentimes very swift of foot along the plains.

In size and bulk they considerably exceed all the British Quadrupeds, except the Horse; and the Arnee, which has been lately discovered to inhabit

* *Bos Moschatus* of Linnæus.

the interior country of the East Indies, is stated to measure nine feet in height, from the point of the fore foot to the shoulder. A few of the animals, however, and particularly the African Dwarf Ox *, are remarkably small. A Bull of the latter species, which was presented to the late Duke of Northumberland, and allowed to run tame about the kitchen at Sion-House, for several years, measured no more than two feet in its greatest height.

All the Oxen fight by pushing forward with their horns, and immediately afterwards throwing up their heads. They likewise often kick and plunge, in a violent manner, with their feet; and, when greatly irritated, there are few animals of courage or strength sufficient to oppose them with any chance of success.

THE COMMON OX†.

THERE is, I believe, no doubt that the Ox is a descendant of the Bison, a large and powerful animal, which inhabits the marshy forests and vales of Poland and Lithuania. In the lapse of many

* *Bos pumilus* of Linnæus.

† *Bos taurus domesticus*.—Linnæus. *Le Taureau*.—Buffon.

See the Synopsis, p. 62, No. 41.

centuries, however, its general appearance, as well as its temperament and disposition, have undergone a radical change. The enormous strength of body, great depth of chest and shoulders; the shagginess and length of hair which covers the head, neck, and other fore parts of the Bison, as well as his savage and gloomy disposition, are, in the present animal, so altered, that the mere variety would almost seem to constitute a distinct species.

Domestic cattle are, for the most, heavy and stupid; but at the same time exceedingly patient, mild, and docile beasts. They graze, with the greatest appearance of placidity, in our meadows and pastures; and, as soon as they have filled their first stomach with the half masticated grass, and other vegetables, they generally lie down to ruminate, or chew it over again for digestion*. It is asserted, that intense heat incommodes them much more than intense cold. In the summer they seek for shade, during the hot parts of the day; or if they are near a pond, or stream of water, they walk into it, and stand there sometimes for many hours successively. In this they have at least one important relief that the shade does not afford them. The *Gadfly* †, which deposits its eggs in the skin of

* For an account of the rumination of Cattle, see p. 27.

† *Æstrus Bovis* of Linnaeus.

their back, and with which, in dry grounds, they are oftentimes so much teased, that they run about, with their tails extended, in the greatest agitation and alarm, will not pass the bank of the water to attack them. These animals are fond of meadows, where there are trees in the hedge-rows, and where the grasses are rich and succulent. In the western islands of Scotland, and on some parts of the Scottish coasts, from want of better nutriment, cattle are often fed, during the winter season, on sea-weed; and it is said that this will so fatten them, as to render them fit for killing. In some of the villages of the sea coasts of Ireland, the inhabitants feed their Cows on fish boiled down into soup.

The baiting of Bulls, as it is called, that is, the chaining of them to a stake or ring, to be torn in pieces by Dogs trained for the purpose, is pursued in some few of the English towns, with a degree of savage ferocity which reflects the highest disgrace on a civilized and Christian country. It is a detestable practice, which ought by all means to be abolished, since, (without any consideration for the sufferings of a tormented animal,) its evident tendency is to corrupt the heart, and steel it against every proper feeling of humanity. Its origin is supposed to have been derived from an ancient custom, in the manor of Tutbury, in Staffordshire. A Bull was given annually, in the month of August, by the prior of Tutbury, to the minstrels. After undergoing the torture of having his horns cut, his
ears

ears and tail cropped to the very stumps, and his nostrils filled with pepper, his body was besmeared with soap; and, in that pitiable state, he was turned loose in order to be hunted. This was denominated *bull-running*; and if the Bull was caught, or held so long that a person could pull off some of his hair, he was then tied to the stake and baited. The anecdotes of wanton cruelty that have been related of this brutal sport, are, indeed, such as would even disgrace the most ferocious of those nations which we stigmatise by the name of savages. But, when we reflect on the innumerable advantages which mankind derive from these animals; that they actually yield us more services than any other race of animals we possess; every repetition of their torture ought to be considered, in another point of view, as a shameful proof of the most treacherous and cowardly ingratitude.

The Cow is an object of the highest utility. After she has furnished several Calves, and an abundance of milk, she is fatted for the butcher; and her flesh, at last, affords to mankind an healthful and nutritive food. The skins of cattle are employed for making harness, saddles, shoes, and for various other purposes; and the refusé cuttings are boiled down into glue. Of their horns are manufactured combs, handles for knives, toys, and several other things. The fat, or suet, is made into candles; and the blood is employed in clarifying sugar. The membranes of the stomach are used for beating gold-

gold-leaf betwixt; and these, under the name of *gold-beaters' skin*, are afterwards considered, by many persons, to be efficacious in healing recent wounds. Of gold-beaters' skin, the French manufacturers of toys sometimes construct little aerostatic globes, or balloons, for the amusement of children.

The Ox has been trained to agricultural labour from the earliest ages of the world. In the Sacred Writings, and in the works of most of the ancient eastern authors, this animal is invariably mentioned as the only one that was employed in the plough. The same is also observable in all the accounts respecting the agriculture of ancient Greece and Rome. In some parts of India, Bullocks are, at this day, almost exclusively employed for the purpose of carrying weighty commodities.

“ Deprived of the aid of these useful animals, (says the elegant French naturalist, M. de Buffon, in his eulogy on the Ox,) the poor and the rich would alike have great difficulty to subsist. The earth (in France) would remain uncultivated; the fields, and even the gardens, would be dry and sterile. It is on the Ox that all the work of the country falls; he is the most useful domestic that the farmer possesses; and he performs all the labour of agriculture. In former ages, he constituted the only riches of mankind; and still he is the basis of the riches of those nations which only flourish and are supported by the cultivation of
lands,

lands, and the number of their cattle. It is in these that all real wealth consists: every other kind, even silver and gold, are only arbitrary representatives, which have no value but that which is conferred upon them by the productions of the earth*."

Oxen attain maturity at the age of about eighteen months, or two years. From this age, till they are nine years old, they are in their greatest vigour; and the duration of their lives seldom exceeds fourteen or fifteen years. The period of gestation in the females is forty one weeks; and they usually produce only a single Calf at a birth. It is a remarkable fact, that when a Cow happens to produce two Calves, of different sexes, at the same time, the male is always perfect, but the female is incapable of continuing the species, and is known to farmers by the name of *Free Martin*.

With respect to the diseases to which these animals are liable, the principal seem to be fevers of different kinds, murrain or pest, inflammation in the lungs or liver, and loss of cud. Cattle are poisoned by eating yew, hemlock, or aconite; and they often die in consequence of eating gross succulent clover, which fills and distends them with wind to an amazing degree.

* Buffon par Sonnini, xxiii. p. 13.

When cattle are at rest, or not employed in grazing or chewing their cud, they are observed frequently to lick themselves. By this they raise up the hair of their coats, and often swallow it in considerable quantities. The substance, thus swallowed, is indegestible, and remains in the stomach. Here it collects into round, smooth balls, which sometimes attain so great a size as to incommode and even prevent digestion*.

* The name of the male is *bull*: during the time he sucks he is called a *bull-calf*, until turned of a year old, when he is called a *stirk* or *yearling bull*; then a *two*, *three*, or *four-years old bull*, until *six*, when he is *aged*. When emasculated he is called an *ox*, or *stot-calf*, until a year old, when he is called a *stirk*, *stot* or *yearling*, then a *two-years-old steer*, and in some places a *twinter*; at *three* he is called a *three-years old steer*, and at *four* he takes the name of *ox* or *bullock*. —The general name of the female is *cow*. When sucking the dam she is called *cow-calf*; then a *yearling quey*, or *heifer* or *twinter*; the next year a *three-years old quey* or *heifer*; and when *four*, she is first called a *cow*. CULLEY, p. xvii.

In Wales the male is called *tarw*; the female, *buwch*; and the young, *llo*: in France, *taureau*, *vache*, and *veau*: in Italy, *toro*, *vacca*, and *vitello*: in Spain, *toro*, *vaca*, and *turnera*: in Portugal, *tauro*, *vaca*, and *vitela*: in Germany, *stier*, *kuh*, and *kalb*: in Holland, *stier* or *bul*, *koe*, and *kalf*: in Sweden, *tiur*, *ko*, and *kalf*: in Denmark, *tyr*, *koe*, and *kalv*.

The varieties of Cattle are exceedingly numerous. The following are the most distinct of those produced in the British islands.

** Horned Cattle.*

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|--|-----------|
| 1 Wild Cattle. | 9 Scots. |
| 2 Devonshire. | 10 Welsh. |
| 3 Herefordshire. | 11 Irish. |
| 4 Sussex. | |
| 5 Northern short-horned, or
Holderness. | |
| 6 Lancashire, or Long-horned. | |
| 7 Alderney. | |
| 8 Highland Stots, or Kyles. | |

*** Hornless Cattle.*

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|---------------------------------------|
| 12 Suffolk Duns. |
| 13 Galloway. |
| 14 Northern, or Yorkshire,
polled. |

** Horned Cattle.*

THE WILD CATTLE.

THIS breed, which is found in greatest perfection in the park belonging to Lord Tankerville, at Chillingham, near Berwick*, is considered, in some

* At Woolerton, in Nottinghamshire, the seat of Lord Middleton; at Gisburne, in Yorkshire; at Lime-hall, in Cheshire; and at Chartley, in Staffordshire, there are breeds called Wild Cattle: but it is supposed that many of these have been contaminated by crossing with other breeds.



Howitt

Wild Cattle.



respects, to have a near alliance to the really wild cattle of the continent.

The colour of their upper parts is a creamy white. The muzzle is black, and about a third of the outside of the ears is always red. Their horns are white, with black tips: these are very fine, and bend upwards. Some of the Bulls have a thin, upright mane, about an inch and a half or two inches long; but they are entirely destitute of that general shaggy appearance, in front of their bodies, which distinguishes the wild breeds of the continent. They, however, retain, in a great degree, their original ferocity. They herd together; and are so wild that they will suffer no person to approach them. At the first symptom of alarm, they gallop off in a body to some distance, when they stop, turn round, and gaze on the intruder. If he continues to approach, they repeat the same actions, every time presenting themselves nearer to him; and if he did not at last retire, they would, doubtless, attack and destroy him.

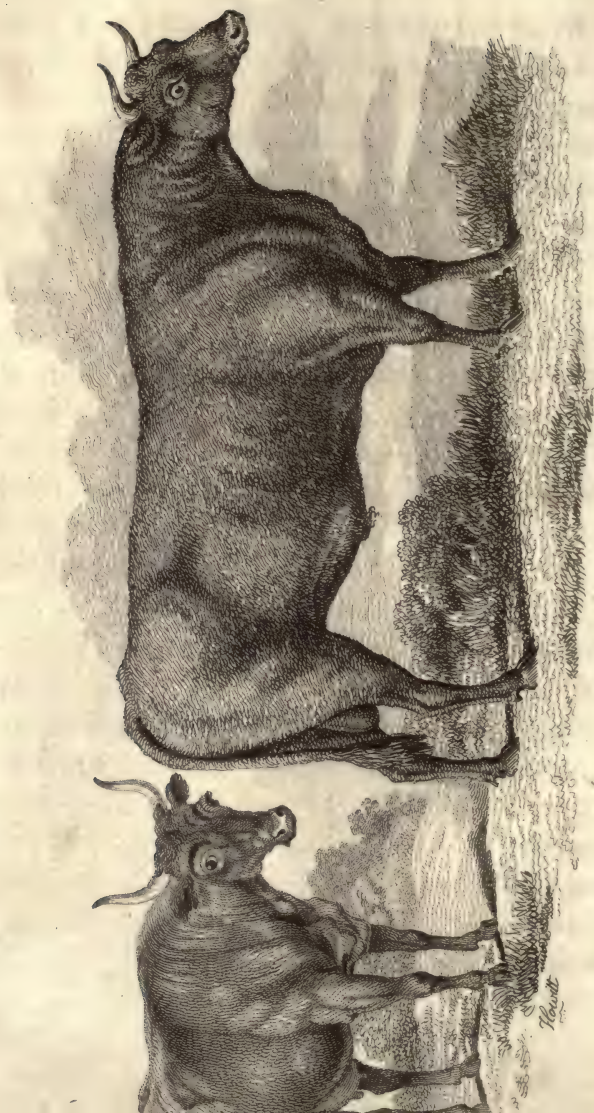
These animals never approach the house, or those parts of the park that are much frequented; unless, the deep snows or severe weather of winter depriving them of food, they are compelled, by hunger, to leave their usual sequestered haunts, in order to obtain the supplies that are necessary to their existence. Since the Bulls would destroy their offspring if they could discover them, the females invariably hide them, during the first week or ten days

days after they are produced, in the most sheltered parts of the woods, stealing off, unobserved by the the herd, twice or thrice every day, to suckle them. As soon as they have attained sufficient size and strength to venture abroad, and provide at least some food for themselves, the Cows lead them to the herd, where they are immediately acknowledged; and after this, the Bulls, instead of attempting to injure them, will, on all occasions of danger, come boldly forward in their defence.

If any person happens to approach the retreat in which the young animals are concealed, it is said that they lie close to the ground, almost like a Hare in its form, in order to hide themselves from observation.

These animals do not often become very fat; nor, indeed, can this be expected, when we consider the nature of their pasture, and the frequent agitation which they experience from the intrusion and curiosity of strangers. The six-years-old Oxen are, however, good beef. The weight of the Oxen is usually from five to six hundred pounds, and that of the Cows from three hundred and fifty to five hundred.





Devonshire Cattle.

THE DEVONSHIRE CATTLE.

By all judges of cattle, the Devonshire breed is confessed to be one of the most beautiful, and at the same time one of the most valuable, which our islands produce. They are of large size, and of a red colour. The colour of the Cows varies from light blood-red to dark mahogany; and the face, knees, and hocks, sometimes approach to black. The Bulls are nearly the same; but are also generally dark in the fore-quarters, and mottled on the sides and back. The Oxen are often long in the coat; and a glossy mahogany colour, with waving curls, is held in great esteem: any white, except on the tip of the tail, is disliked by the breeders, from its being supposed to show a mongrel tendency. Round each eye there is a light ring. The horns taper to a point, and are of a light yellow colour. The head is small, and the muzzle of a clear yellow, like horn. These cattle are fine in the bone, and clean in the neck. They are also wide across the hips and bosom. Their back is straight; and the tail is small and set on very high. They are thin skinned, and silky in the handling. The general height of the Bull is from twelve to thirteen hands; of the Cow, from eleven to twelve; and of the Oxen, from fourteen to fifteen.

The Devonshire cattle arrive at maturity sooner than most other breeds; and the full-grown animals are so valuable, that few of the Calves are killed. For usefulness in agricultural labours, the Oxen are held in the highest estimation. They are well fitted for draught, both as to hardiness and activity.

The average quantity of butter produced by the Cows is from seven to ten pounds per week, though some have been known to yield as much as thirteen or fourteen. They have not usually been considered as excellent dairy stock; but some years ago, Mr. Conyers, the proprietor of a large dairy at Epping, was induced to make a trial of them, and for this purpose purchased twenty-four Heifers and two Bulls. His experiment succeeded so well, that he has since more than doubled the number of his Cows; and many of the Essex farmers, and others, have followed his example. The price of a Cow and Calf is from nine to about fifteen pounds.

In excellence of beef the Devonshire Oxen can scarcely be exceeded; and it is a remarkable circumstance, that they will bear driving to London, sometimes without the smallest waste, from a distance of considerably more than a hundred miles. Their skin is reckoned among the thinner classes; but it improves much in tanning. The tallow is of peculiarly good quality.

The animals of this breed are scattered over the counties of Somerset, Devon, and Cornwall; but
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Herefordshire Cattle.

Thout

they are found in the greatest purity in the immediate neighbourhood of Barnstaple.

THE HEREFORDSHIRE CATTLE.

THESE, like the preceding breed, display all those marks which are considered to be characteristics of beauty and excellence. They are of great size and weight, yet remarkably small boned. Their fore-end is light, their bosom broad and deep, and their loins broad, the hip-bones spreading wide, and standing high and level with the top of the back. The back is straight, and the barrel round, produced by a broad projecting rib. These animals are distinguished by a bald or spotted face, a streak of white along the top of the neck to the shoulder; bright and spreading, but not long horns; and a small head. Their general colour is dark-red or brown, but the belly and under part of the throat are white. The legs also are sometimes white or spotted; and the tip of the tail is almost always white. The horns in the Oxen and Bulls rise low and back, bend first somewhat backward, and then sideway and forward. Those of the Cows spring rather high from the head, take first a direction sideway, and then curve forward, upward, and back, the points somewhat approaching each other.

These noble animals are, in general, very active

and tractable; and, being powerful for draught, they are in great repute for the purposes of husbandry. They are likewise, from their great substance as well as depth of carcass, in high esteem amongst graziers. At Smithfield market, in the Christmas of 1799, a butcher of Reading gave a hundred guineas for an Ox of this breed; and others have at different times been sold for the same money. Mr. Tully of Hunterton, near Hereford, fattened one of these Oxen to 1928lb: the fat weighed 288lb.; the tongue was sold for a guinea; and the hide for three guineas. On an average, the Oxen, when fattened, weigh from fourteen to eighteen or twenty score per quarter; and the Cows from nine to twelve, or sometimes fifteen or sixteen. The Cows do not produce either much or very rich milk. The general price of a Cow and Calf is from eighteen to twenty-five guineas; and of Oxen, in the yoke, from twenty to thirty.

This breed is in the highest perfection in the neighbourhood of Hereford; but it is to be met with in various other parts of that and the adjacent counties.

THE SUSSEX CATTLE.

In many respects the Sussex cattle exhibit a near alliance to those of Devon. Their colour is generally red, or brown; though some individuals are

Sussex Cattle.





are black, black and white, or red and white. Their hair is fine, the skin thin, neck and head clean; and the horns of middle length, for the most part white, and somewhat pointing upward. In general they are well formed in the hind quarters; wide across the hips, rump, and sirloin, but narrow on the chine. They are tolerably straight along the back, but the ribs or sides lie too flat. They are thin in the thigh, and the bone is not large. There is, however, in proportion, considerably more bone than in either the Devon or Herefordshire breeds.

These Oxen, like the two last kinds, are highly serviceable for labour. They are generally worked from the age of three to six or seven years, when they are turned off, in order to be fatted. An Ox, six years old, will weigh, when fat, from sixty to a hundred stone, fourteen pounds to the stone; and the fore-quarters are usually the heaviest. The beef is of excellent quality.

A good Cow, after the Calf is taken from her, will produce, if well kept, from six to eight pounds of butter per week, for three or four months after taking off the calf; and double that quantity of skimmed-milk cheese. These Cows do not give so much milk as the Suffolk cattle, but it is considerably richer.

The Earl of Egremont has lately paid great attention to the breed. This circumstance, aided by
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the establishment of the Sussex Agricultural Society, will, no doubt, tend greatly to its improvement.

THE NORTHERN SHORT-HORNED CATTLE.

Holderness, Dutch, Holstein, or Yorkshire breed.

It is principally along the sea-coast districts of Lincolnshire, Yorkshire, Durham, and Northumberland, that the cattle of the present breed are to be met with; and into these parts there is reason to suppose they were originally imported from the continent. They differ from the other breeds in the shortness of their horns, and in being wider and thicker in their form or mould. In size and weight they exceed all the British cattle. Their hair is short, smooth, and thinly set upon the body. In colour they are sometimes very beautiful, being spotted, striped, or otherwise variegated with red and white, or with black, brown, and white. Their hides are remarkably thin.

The Cows have great celebrity, from their yielding a very extraordinary quantity of milk. This is not certainly so rich as that produced from several of the other breeds; but its abundance makes ample amends to the breeder, for its defect in quality. There have been instances of these Cows giving
thirty-



Northern Short horned or Holderness Cattle.



thirty-six quarts of milk per day; and of forty-eight firkins of butter being made in one season from a dairy of twelve Cows. But the more general quantity is three firkins per Cow, in a season, and twenty-four quarts of milk per day. This stock is now well known in the neighbourhood of the metropolis, being that which is generally kept by the London Cow-keepers.

It is said of this breed that they eat more food than any of the others; and we ought not to be surprised at this, when we consider how much they excel in three valuable particulars, namely, in affording the greatest quantity of beef, tallow, and milk, of any known kinds of cattle. The Oxen, when fatted, usually weigh from sixty to a hundred stone, (fourteen pounds to the stone,) the four quarters only; and they have been fed to a hundred and twenty, a hundred and thirty, and even a hundred and fifty stone. A red Ox of this breed, bred and fatted by Sir Henry Grey, Bart. of Howick in Northumberland, was killed in March, 1787, when seven years old, and weighed as follows:

	st.	lb.		£.	s.	d.
The two fore-quarters	82	2	.. at 4s. per stone	16	8	6
The two hind-quarters	70	7	.. at 5s. per stone	17	12	6
Weight of whole carcass ..	152	9		34	1	0
Tallow	16	7	.. at 4s. per stone	3	6	0
Hide	9	2	.. at 4s. per stone	1	16	6
Total weight of the animal	178	4		Whole value	39	3 6

The animal exhibited in London in the beginning of the year 1802, under the name of the "Wonderful Ox," was a variety produced from this breed by Mr. Collins of Barmton. It weighed more than two hundred stone ; and is said to have been, in every respect, an uncommonly beautiful animal.

There is a very singular breed of short-horned cattle in the neighbourhood of the river Tees, (supposed to have been originally produced by some Bulls brought from Holland,) which the breeders call *lyery*, or *double-lyered*; that is, black-fleshed : for, notwithstanding one of these creatures will feed to a vast weight, yet they are never known to have so much as a pound of fat either inside or out; and the flesh, (for it does not deserve the name of beef,) is black, and as coarse-grained as horse-flesh. Mr. Culley once saw a beast of this sort killed, which, although it had been fed all the summer, was entirely destitute of fat. Its two ends, namely, its shoulders and buttocks, were heavy, round, and coarse, without the hip-bones at all standing up; and the body quite small. In short, he says that it was more like an ill-made black Horse, than an Ox or a Cow. By the pains and attention of breeders, this useless variety is now nearly extirpated. No man will buy one of these animals, if he knows any thing of the matter; and if he should be once taken in, he will remember it for the future. Persons conversant with cattle readily find them out, by their generally round form,





Lancashire Cattle.

Pub. by W. Darnley & J. Harvey, Sept. 12th, 1808.

form, particularly about the buttocks, which are turned like those of a black coach-horse, and by the smallness of their tail.

THE LANCASHIRE OR LONG-HORNED CATTLE.

IN the present breed the horns are long, and either regularly and horizontally extended to the points, or fall down the cheeks till the points almost meet beneath. The hide is thick, and of firm texture; and the neck coarse, thick, and leathery. The hair is long, close, and somewhat more soft than that of most other British cattle. The hoofs are large. The animals vary much in colour, but in general they are pied, red, or brind-ed; and have, invariably, a white list or stripe extending along their back. With respect to shape, they are deeper made in the fore-quarters, and lighter in the hind-quarters, than most other cattle.

Being, for the most part, heavy and sluggish in their motions, these animals are in no estimation for agricultural labours. The Cows give rich and good milk, generally from sixteen to twenty-four quarts per day; and the usual annual produce of cheese from one Cow is about three hundred-weight. Of late years, these cattle have been dispersed over a great part of South Britain as dairy stock.

stock. Within the last forty years they have been so exclusively the stock in the south of Staffordshire, that it is said an individual of any other race would have been gazed at as a new animal. This breed is chiefly found in the counties of Lancaster, Derby, Stafford, Salop, Warwick, Leicester, Worcester, and Northampton.

They are hardy animals, readily become fat, and produce excellent beef. But they are chiefly celebrated for the thickness and substance of their hides, which are very valuable, and, proportionally with those of other cattle, sell at high prices. Many instances have occurred of the hides selling for a greater price per pound than the beef.

The value of a Cow and Calf, of the better sort of common stock, is from ten to twenty pounds; and the Cows, when fatted, are worth from ten to about twenty-five pounds each. They generally weigh from eight to twelve score per quarter.

The improved Lancashire breed, called Leicestershire Long-horned Cattle.

Mr. Bakewell of Dishley, near Loughborough, made some great improvements in this breed of cattle. By selecting those animals only which had the smallest bone and best carcasses, and by judiciously crossing them, the coarser parts have been lessened, and those that are more valuable enlarged.

The





Hewitt

Alderney Cattle.

Pub. by W. Dutton & J. Harvey Sept 5. 1808.

The animals are become finer in the neck, throat, and bosom : the back is strait, wide, and loaded with flesh : the rump is thick, and fleshy on the points, and has frequently hillocks of fat about the root of the tail, even when they are in common condition : the flank feels thick and fleshy : and the beasts handle, in every part, loose and mellow.

It is said that the Long-horned Cattle keep themselves in good condition with less food than any other breed. They are quiet animals, fatten rapidly, and, when properly fed, afford excellent beef.

These animals are in so much request, that a well-known Bull, called Shakespear, belonging to Mr. Paget, was sold, in November, 1793, for 400 guineas ; and at Mr. Fowler's sale, in 1791, a Cow was sold for 273*l*. In the spring of 1792, Mr. Bakewell let out a Bull for a hundred and fifty-two guineas, for four months, namely, from the first of May to the first of September !

THE ALDERNEY CATTLE.

THESE animals are scarcely admissible into the enumeration of British varieties of cattle ; but as they are a very beautiful and favourite breed, and have been long known in the southern parts of the kingdom, I could not prevail with myself to omit them. It is probable that they are too delicate and
tender

tender ever to be attended to by the British farmers, particularly by those in the northern parts of the island; yet they will always be esteemed and encouraged by the noblemen and gentlemen of the country, not merely on account of their elegant appearance, but because the milk produced by the Cows is richer than that of any other breed.

The Alderney cattle have a somewhat distant resemblance to Deer. They are, in general, fine-boned; their heads are small, and their horns short. In general, they are of a light red or yellowish colour; and wherever there is any white upon their body, it appears as spots upon a coloured ground, and not, as in the greater part of cattle, as the ground upon which the other colours are spread. The Cows seldom exceed the height of four feet.

Some of the Cows give from three to four gallons of milk per day; and the produce, in butter, of a good Cow, has been reckoned from 200 to about 320 pounds in a year. In Jersey, in the year 1799, the value of a good Cow and Calf was about fifteen pounds.

Although in the southern parts of England the Alderney cattle will bear the winter out of doors; yet, from custom, they are always housed in the islands, and fed upon straw. They are sometimes used for ploughing; but it is said that their greatest use in Guernsey and Jersey is in carting, and they are found to answer best in bad roads of the hilly country. They are easily fatted at any age, but
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N^o 41. Var. 8.



Howitt

Highland Stot or Kyloe Ox.

are considered best at the age of four or five years. Their beef is generally yellow, or very high coloured; but it is peculiarly fine in the grain, and of excellent flavour.

In general appearance, the Alderney cattle have a great resemblance to those of Normandy; but they differ much in quality, and are considered as, in every respect, preferable to them.

THE HIGHLAND-STOTS, OR KYLOE CATTLE.

THIS is a small breed, very common both in the islands and in the mountain country of Scotland, where they partake much of the nature of wild animals. Their shape is, for the most part, very beautiful. They are generally of a black or deep brown colour, though sometimes brindled; with fine white upright horns, very sharp, and black at the points. Their hair is thick and furry.

Few animals are more hardy, or better adapted to thrive in bleak and cold regions, than these. Their beef is celebrated through every part of Great Britain. It is finely grained, and well-flavoured. Their general weight is from twenty to thirty, though some of them attain the weight of forty stone, and upwards.

These cattle are driven southward in immense numbers every autumn, into many of the western districts

districts of Yorkshire; but the greatest part of them are sent into the southern counties of England, where they are fatted, and either slaughtered for consumption on the spot, or sent to the London markets. In Shetland their weight is from three to five hundred pounds each; though some of the Cows do not weigh more than from a hundred and fifty to two hundred. In size they somewhat resemble the Alderney cattle: but in their shape and general appearance they are very different.

Some of them possess the double quality of fattening well, and of yielding, in proportion to their size, a great quantity of milk. Cows of this breed have been known to yield, during the summer season, as much as four English gallons and a half of very rich milk in a day, the cream of which, when churned, has produced nearly a pound and three quarters of butter.

The demand for Kyloes into England is of great importance to those noblemen and gentlemen who have estates in the north of Scotland; as their rents are frequently paid in live cattle.

OTHER KINDS OF HORNED SCOTS CATTLE.

WE are informed by Mr. Culley that all the Lowlands of Scotland, except Galloway, have a mixed breed of cattle. Towards Cumberland, the cattle
are

are half long-horns, half polls. On the borders of Northumberland they are mixed with short-horns, as far as Tiviotdale, where they become altogether a coarse kind of short-horned animals, or what the Yorkshire jobbers call *runts*; except a few tolerably good short-horned cattle, bred in that fine country the Tweed-Side. The same kind of *runtish*, coarse breed, continues all the way to the Frith of Forth, crossing this narrow sea into Fifeshire. A stranger would at first imagine the Fife cattle to be a distinct breed; but this arises only from their being more nearly allied to the Kyloes. The cattle all along this coast, continue to change, more and more, diminishing gradually in size, until, upon the edges of the mountains, they become quite of the Kyloe kind; but still much inferior to that pure, unmixed, and valuable breed of Kyloes, which are met with in the more northern and western Highlands.

Dr. Anderson speaks of having seen a kind of Highland cattle, which had a mane on the top of the head, of considerable length, and a tuft betwixt the horns that nearly covered the eyes, giving them a fierce and savage aspect. He mentions another kind, the animals of which have hair of a pale lead colour, very beautiful in its appearance, and in its quality as glossy and soft as silk*.

* Anderson on Rural Affairs, iii. p. 1.

THE WELSH CATTLE.

THE animals which constitute the present variety are of small size, have large and wide horns, thick hides, and, in proportion to their bulk, much bone. They are, on the whole, very hardy; but are, in general, considered ill-shaped, and in no respect as a useful breed. The Cows produce but a small quantity of milk.

THE IRISH CATTLE.

HAVE generally long horns; and are smaller, and afford coarser beef, than most kinds of English cattle: and the individuals that are bred amongst the mountains are said to be much worse, in both these respects, than those which are bred in the level country. By the importation, however, of the English Long-horned stock, the race has, of late years, been greatly improving.

**** Hornless,**





Suffolk Duns.

*** Hornless or polled Cattle.*

THE SUFFOLK DUNS

HAVE their name from the animals being usually of a dun or a pale yellow colour: many of them, however, are red, or red and white. They are invariably polled, and of small size, few of them, when fatted, exceeding the weight of fifty stone. The Cows and Bulls are nearly of the same height, from about four feet and a quarter to four feet and a half. They are rough about the head, with large ears; but in general have fine bones and thin hides. Their body is long, and the legs somewhat short. They are big-bellied, the hip-bones are high and ill-covered, and scarcely any part of the carcass is so formed and covered as to please a person who is used to beasts of the finer breeds. But they have a property which contradicts their appearance; this is, that many of the Cows fatten well, and produce beef of fine quality.

As dairy stock, there are few breeds more excellent than this; since, in proportion to their size, they yield a great quantity of excellent milk. It is asserted, that a first-rate Suffolk Cow, when in full milking, and at the best season, will give as much

as six gallons of milk per day. The yearly produce from one of these Cows is stated by Mr. Young to be,

	£	s.	d.
3 Firkins of butter, at 32s.	4	16	0
$\frac{1}{4}$ of a wey of cheese	1	4	0
A Hog	1	0	0
A Calf	0	10	0
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These are considered to be amongst the most advantageous of all Cows for a private family.

Mr. Culley considers this breed to be a variety of the Galloway, next described, which, he says, might easily take place, from the great connexion that has long subsisted betwixt the Scots Galloway drovers, and the Suffolk and Norfolk graziers and breeders.

THE GALLOWAY CATTLE.

ALTHOUGH a few animals of this breed are found in different parts of England, yet the best and most original must be sought for in Galloway, a large district in the south-west part of Scotland, where they are chiefly bred on the moors or hilly country, and grazed upon lands near the sea, until they are rising

rising five years old. The graziers and drovers then take them, in great numbers, to the fairs in Norfolk and Suffolk. This is usually done before the turnip feeding season. From thence the greatest part are removed, in the winter and spring, when fat, to supply the London markets, where they are readily sold at high prices. Few cattle, of their weight, bring so much money in the Smithfield market. It is a remarkable circumstance, that a Lincolnshire and a Galloway Bullock, sent at the same time, and from the same village, to Smithfield, sold for the same money; although the Scot was only half the weight of the Lincolnshire animal.

The Galloway cattle, in most respects, except of size, and being destitute of horns, resemble the Lancashire or Long-horned breed. Their shape and colour are nearly the same; but in form they are somewhat shorter. Some few of the animals, in every other respect polled, have two little useless horns, from two to four inches long, which hang down loose, and are not, as in other cattle, inserted into the skull. The weight of the Oxen is usually from forty to sixty or seventy stone.

The fat, in this breed, is laid upon the most valuable parts; and their beef is well marbled or mixed with fat. Their hides are of a medium betwixt those of the long-horned and short-horned breeds, neither so thick as the former, nor so thin as the latter.

In proportion to their size, the Cows are considered to be good milkers. The milk is rich, and yields a great quantity of butter. The Oxen are employed in husbandry in various parts of the country.

THE NORTHERN OR YORKSHIRE POLLED CATTLE.

SOME of these animals are of great size, and carry a vast substance of body. In all their qualities, as well as in their general shape and appearance, except that they are destitute of horns, they hold a close affinity to the Short-horned, or Holderness cattle, amongst which they are found.

BELLUÆ.**OF HORSES IN GENERAL.**

NONE of these animals have hitherto been discovered, in a wild state, in any part of Europe. Three species, the Common Horse, the Ass, and the Jickta, inhabit the extensive desarts of Arabia and Tartary ; and two others, the Zebra and Quagga, those of the interior of Southern Africa. Here they congregate in herds or troops ; and, in all their habits of life, are said to exhibit an astonishing degree of sagacity. We are informed that they post sentinels to guard them during their feeding and repose ; and that, on the first signal of alarm from these sentinels, they immediately collect their forces, and prepare to avert the threatened danger. They fight by biting, but chiefly by plunging and kicking with their feet, which, as weapons of offence, they use with wonderful dexterity. They feed entirely on grain and herbage ; and, as they generally inhabit retired parts of the deserts, far removed from the haunts

of man, they are seldom injurious either to his person or property.

The stomach of Horses is small and simple ; and has, at the cardia, a valve, which prevents the animals from vomiting. The intestines, and particularly the cæcum, are very large. They have no gall-bladder. The females have two teats, which are situated in the groin, like those of ruminating quadrupeds. These animals have the singular property of breathing only through their nostrils.

THE COMMON HORSE*.

IN its wild state, the Horse inhabits chiefly the great deserts of Tartary and Arabia, from whence sprang the original stock of our, at present, invaluable domestic. But these animals have for so long a time been trained to labour, throughout every country of Europe, that the date of their introduction is entirely lost. There are now very few parts of the world in which Horses are not known, and, for their usefulness, highly valued. Endowed with fearless intrepidity, they are fitted for the most active military services ; yet, patient and persever-

* *Equus caballus domesticus*.—Linnaeus. *Le Cheval*.—Buffon.

See the Synopsis, p. 67, No. 42.

ing, the same animals will submit quietly to carry burthens, or to toil, for days together, along the roads, or in agricultural labours. Their general character is certainly marked by mildness and docility; but their tempers and disposition are very various. Many are stupid and indolent; and many, almost beyond the power of man to correct them, vicious and perverse. In all these dispositions, however, the more they are treated with care and attention, the more do they adapt themselves to our wants and conveniences.

In some parts of Tartary, these animals have been made objects of divine worship; and altars are erected, and offerings paid, in honour of them. Amongst the ancient Romans they were held in great esteem. At one period, an ordination was passed, which directed that no Horses should be sold, or conveyed out of the Roman provinces. Andromache is related to have frequently amused herself, by feeding, with her own hands, the Horses of Hector.

The ancient writers attribute to the Horse numerous excellent qualities; and, among others, such unusual powers of understanding and recollection, that one of them has asserted of Bucephalus, the Horse of Alexander, that after he had once been clad in his splendid trappings, and had received his royal master on his back, he never would suffer any other person to mount him. Ælian informs us, as a very remarkable instance of

sagacity, that this celebrated Horse, after having received in battle many deep wounds, carried his lord beyond the reach of danger, and then fell down dead*; but it is to be presumed that any other spirited Horse, in similar circumstances, might have done the same thing. According to the authority of Suetonius, Julius Cæsar, as well as Alexander, had a favourite Horse, which would allow no one to ride him except his master.

With respect to British Horses, great attention has now been paid to the breeding of them for several years; and although our climate is not deemed peculiarly favourable to the Horse species, yet the consequence of this attention is, that in no part of Europe are Horses bred that can equal those of Britain, either in swiftness of foot, or strength and perseverance in the course. In Arabia, indeed, where these animals may be deemed the chief support of the families that possess them, and where, on many occasions, the very existence of the owner depends upon the powers of his Horse, the circumstance of having excellent radical qualities in the parent stock, has obtained a still greater degree of attention than in Britain. In that country, it is not so much swiftness of foot that is regarded, as the faculty of bearing fatigue and abstinence without being exhausted; and so successful have

* Ælian, Hist. Animal. lib. 16, cap. 24.



Race Horse.

Howitt

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these people been in augmenting this faculty, by their uninterrupted care always to select the most eminent of the kind to breed from, that they have at length obtained a race which possesses it to a degree that could never have been deemed possible by other nations, had not the evidence of the fact been altogether undeniable. A Horse in that country, which cannot sustain abstinence for three days, under continued bodily exertion, is accounted of little value*.

Him the fierce Arab mounts, and with his troop
Of bold compeers, ranges the deserts wild.
Where, by the magnet's aid, the traveller
Steers his untrodden course; yet oft on land
Is wreck'd, in the high-rolling waves of sand
Immers'd and lost. While these intrepid bands,
Safe in their Horses' strength, out-fly the storm,
And scouring round, make men and beasts their prey.

THE RACE-HORSE.

With respect to speed, for a short distance, the British Race-Horse is, at this time, without rival in any country of the world. The Arabian Horses, which have been tried in England, have never

* Anderson's Recreations in Agriculture, &c. p. 72.

proved themselves in any degree equal to these upon the course. The celebrated Horse Childers, in the year 1721, ran four miles in six minutes and forty-eight seconds, carrying at the same time a weight of nine stone two pounds. In his running, he is supposed to have covered, at every bound, a space of twenty-five feet. Bay Malton, in 1763, ran four miles over Knavesmire, near York, in seven minutes, forty-three seconds and a half. Eclipse ran the same distance in eight minutes, carrying the weight of twelve stone*. As to the number of miles that an English Race-Horse would be able to run in an hour, it is a singular fact, that scarcely any opinion has yet been formed; since no sportsman, except one, has hitherto had the curiosity to make the attempt. Mr. Hull's Horse, called Quibbler, a middling racer, was once tried, and he ran, within this time, about twenty-two-miles. Little, however, can be inferred from hence, since this rate has been exceeded upon a hard road, by a three-part bred hack†. It is con-

* It is generally said, that a Horse which will run four miles in eight minutes, carrying a weight of eight stone and a half, must win plates.

† In the technical phraseology of Horse-dealers, a *bred* Horse is understood to be one of the pure racing oriental blood. The degrees of his commixture with the common blood, or breed, of this country, are signified by the terms *three-parts bred*, *half-bred*, *blood-horses*, or *having show of blood*.



Hunter

Hunter







Cart Horse.

Pub. by W. Darton & J. Harvey Sept. 1. 1808.

sidered probable that a good racer would carry a weight of eight stone more than twenty-six miles in one hour*.

THE DRAY-HORSE.

BESIDES its Race-Horses, this country boasts another breed, which, for one peculiarity, are considered to be unrivalled. These are the large and heavy black Dray-Horses, so common in the neighbourhood of London, which, in point of size and fatness, do not, perhaps, admit of any equal; though for hardiness, vivacity, and nervous energy, they do not rank high among their species. "Eastern princes, (observes Dr. Anderson,) have their stables filled with stately elephants for parade, because none else can afford to keep them; and wealthy London brewers, for the same reason, turn out these monstrous animals, day after day, to paw up the streets, and to be gazed at, as a wonder, by the admiring multitude†." These Horses are likewise used by the farmers in some parts of Hampshire and Berkshire, where the teams form a considerable article of ostentation and parade.

* Lawrence on Horses, ii. p. 185.

† Anderson's Recreations in Agriculture, &c. iv. p. 241.

THE SUFFOLK PUNCH.

THE British draft Horses, that are to be considered as truly serviceable, are the Suffolk Punches. They are, in general, of a chesnut colour, in stature somewhat low, and are rather coarse headed. Their carcasses are large and deep, and they are altogether strong, firm, and well-compacted animals, capable of great bodily exertion, and long perseverance. Although their motions are, in general, slow, they prove highly useful, both for the cart and plough. At drawing dead pulls they are superior to most, if not to all others; but this is, in a great measure, owing to early training. It is well known that a team of Suffolk Horses, on a signal being given, will, in the carters' phrase, "all down upon their knees," and leave nothing behind them that it is in the power of flesh and blood to draw away. In the Annals of Agriculture there is an account of five of these Horses, belonging to Mr. Collett, which drew thirty sacks of barley, over the sandy road from Walton to Ipswich; and of a single Horse belonging to Mr. Constable, of East Berghott, which was known to draw, in a cart, ten sacks of flour, each weighing twenty stone and a half, for five or six miles, on a heavy road*.

* Anderson's Recreations in Agriculture, &c. and Lawrence on Horses.



Suffolk Cart Horse.



THE LANARK OR CLYDESDALE HORSES.

WE are informed by Dr. Anderson, that there is a breed of draft Horses reared in Scotland, and known by the name of Lanark or Clydesdale Horses, which, if possible, are still more valuable than the above. They are lighter in their body, and in all respects more elegantly formed. Their limbs are clean and sinewy, their neck longer, their head of finer form, and their eyes more sprightly and animated. Their tread is firm, with considerable activity, and they are capable of exerting a wonderful degree of muscular strength for a short push, without being injured by it. This renders them peculiarly estimable in the hilly country, where they are chiefly found, and where there is a necessity for calling forth such exertions on numerous occasions. They are hardy, can live upon almost any food, and are, perhaps, the thriftiest Horses for the cart or plough that are to be found in these islands*.

As to the English *Saddle Horses*, they are in great request in many countries of the continent, from the circumstance of their uniting superior action, with strength, proportion, and beauty. No people in the world are so fond of

* Anderson's Recreations in Agriculture, &c. iv. p. 241.

speedy travelling as the English; and, consequently, the attention of breeders has in no country been so much directed to the attainment of the particular shape and qualifications that are conducive to action, as in Great-Britain.

The utmost speed of an English trotter is considered to be a mile in about two minutes and fifty-seven seconds; and this was performed some years ago by Archer, a celebrated Horse, belonging to Marsden the dealer. Horses have often been known to trot sixteen miles in an hour, with tolerably heavy weights. Perhaps some Horses may be able to trot eighteen miles within the hour, or ten miles in half an hour; but very few are able to exceed this rate. Mr. Lawrence mentions an instance of a Horse having trotted thirty-two miles, on the road betwixt Stilton and Cambridge, with a weight of about ten stone, in two hours; and it is said that he could have gone thirty-four miles in the given time. This Horse, which belonged to a person of the name of Cartwright, was then very near thirty years of age. The same writer speaks also of a mare that trotted seventy-two miles in six hours; and of another that trotted a hundred miles in eleven hours and forty minutes*. With respect to the greatest rate at which a Horse is able to walk, it is believed that very few have been able to exceed that of six miles within an hour.

* Lawrence on Horses, i. p. 130.

GALLOWAYS.

The Mountain Poneys of Wales and Scotland, which, in the latter country, are known by the name of *Galloways*, although very small, are extremely hardy and durable. The best of them seldom exceed the height of fourteen hands and a half. Their eyes are lively and spirited; their bodies are firm, and their legs nervous. They are too small for draught, and too little showy to make a sufficiently good appearance for Saddle Horses; but for carrying a person, with ease and expedition, over rocky and mountainous roads, with little food and bad accommodation, they have, perhaps, few equals amongst their species. Dr. Anderson possessed one of these Galloways when he was a boy. In elegance of shape, he says, it could scarcely be excelled; and in disposition it was in the greatest degree gentle and compliant. It moved almost with a wish, and never tired. He rode this little creature for five and twenty years, and twice in that time he rode one hundred and forty miles at a stretch, without stopping, except to bait, and then for not above an hour at a time; and it came in, at the last stage, with the same cheerfulness and alacrity as it travelled the first*.

* Anderson's Recreations in Agriculture, &c. iv. p. 241.

In the Statistical Account of Scotland there is an anecdote, which affords additional proof of the great strength and hardiness of these animals. A countryman, some years ago, was employed by the Laird of Coll, as a post to Glasgow or Edinburgh; and his usual burthen was about sixteen stone. Being once stopped at a toll-gate, near Dumbarton, he humorously enquired whether he should pay the toll if *he* carried a burthen through the gate; and on being answered in the negative, he immediately dismounted and bore his Horse through on his shoulders.—This breed is said to be now nearly extinct in Scotland, which is much to be regretted; for if a sufficient number of these Horses could be obtained to make a proper selection for breeding from, it is impossible to say to what degree of excellence they might in time be raised. In the island of Mull, one of the Hebrides, some remains of them are still to be found, though they are so much neglected as to be fast degenerating, by intermixture with other infinitely less useful breeds.

THE SHELTIES.

The Shetland Islands produce a small race of Horses called Shelties, which, although their size is exceedingly diminutive, are in other respects highly

highly excellent. A man of ordinary size and strength can lift one of them from the ground with great ease; since some of them have been seen scarcely more than three feet in height, from the foot to the shoulder. They are, however, so remarkably strong, for their size, that even one of these diminutive creatures would carry a man of twelve stone weight, a journey of forty miles in the course of a single day. Their general form is very elegant; and their body is thicker and more compact than that of a Blood Horse. The bones are exceedingly small; as is also their head, and that part of the neck which joins to the head. The black ones are esteemed the most hardy, whilst those that are pied seldom prove good. They sometimes live to the age of thirty years and upwards, notwithstanding the little care that is paid towards sheltering them from the cold, which, in the climate of the Shetland islands, is peculiarly severe in the winter. From the circumstance of their being generally compelled to live out of doors during even the severest months of the year, great numbers are occasionally frozen to death. At this season, when the ground is entirely covered with snow, the wretched animals are compelled to seek a subsistence on the sea-weeds, which, once in every twelve hours, are left exposed by the tide.

THE IRISH HORSES.

IN Ireland there appears to be very few of those large cart Horses that are so common in South Britain. Those that the Irish have, being, for the most part, ill-shaped, and, in the dealers' phrase, loose and leggy. The saddle Horses seem naturally as good as ours; but in general they are ill kept, worse groomed, and still worse shod. In the latter respect, it has been remarked, that the Irish people are at least thirty years behind us; the feet of their Horses, even in Dublin, being torn to pieces by weight of iron, and by nails which are almost like skewers. The hunters are able to leap exceedingly high, as they are trained to leaping from their being first bitted.

The natural diseases of the Horse are few; but, from ill usage or neglect, many are brought on which often prove fatal. He is subject to various species of worms, both in his intestines, and in his glandular viscera. In the former are often found the *ascaris equi*, sometimes a foot and a half long, and as thick as a man's little finger; and several species of *tape-worms*, one of which is frequently known to measure from twenty-six to thirty inches in length. Attached to the coats of the stomach and rectum are found what the country people call
botts,

botts, which are the larvæ or grubs of a species of gadfly*. The parent insect deposits her eggs on the hairs of some part of the body which the Horse can reach with his tongue; and, in the animal's licking himself, they are conveyed into the mouth, and thence to the stomach or intestines, where they are hatched, and become botts. When these arrive at their full growth, they loose their hold, and passing through the body, fall to the ground, where they undergo their final change into winged insects.

If Horses be well treated, and proper care be taken of them, it is said that they will sometimes live to the great age of fifty years; but during part of this time they are generally so decrepid as to perform no services whatever to their owner. The female, or mare, goes with young two hundred and ninety days, and seldom produces more than one foal at a birth.

There is a prevalent notion, that the flesh of the Horse is bitter, and unpalatable to the taste. This, however, is not true. It is eaten in the various countries of Asia; and the Calmuc Tartars are so partial to it, that they seldom eat any other kind of flesh. They likewise drink the milk of the mare, and make of it both butter and cheese. Dampier informs us that he frequently saw Horses' flesh exposed for sale in the markets of Tonquin; and he says expressly, that it was as much esteemed amongst

* *Oestrus equi* of Linnæus.

the inhabitants as beef*. Dr. Anderson has strongly recommended the fattening of Horses for food, even in Great Britain, instead of cattle, and urges his recommendation by declaring, that horse-flesh is superior, in delicacy of flavour, to beef†!

The hair of the Horse is applied to several useful purposes. The long hair of the tail is employed for making sieves, fishing lines, and the bows of musical instruments; whilst the short hair is used in stuffing saddles and mattresses: the latter even puts it into his coarse felt. The skin, after it is tanned, is made into collars, traces, and other parts of harness; and frequently, under the name of *cordovan*, into shoes.

In Wales, the male of the present species is called *march* or *ceffyl*; and the female *casseg*: in France, *cheval*, and *cavale* or *jument*: in Italy, *cavallo*, and *cavalla*: in Spain, *cavallo* or *caballo*, and *yegua*: in Portugal, *cavallo* and *egoa*: in Germany, *pferd* or *ross*, and *stut* or *motsch*: in Holland, *paerd* or *hengst*, and *merrie*: in Sweden, *hæst*, and *stood*: in Denmark, *hæst*, *oeg*, or *hingst*, and *stod-hæst*, or *hoppe*: in Russia, *kon*, and *loschad*.

* Dampier's Voyages, ii. p. 30.

† Anderson's Essays relating to Agriculture and Rural Affairs, iii. p. 548.





Afs.

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THE ASS*.

THE Ass is supposed to have been originally imported into Britain, either from Spain, or from some part of Africa. But the animal, instead of being improved in its breed by domestication, has, in our islands at least, entirely lost its original elegance of form, and vivacity of manners. Doomed to a neglect, which the race by no means deserves, it has become the slave and companion only of the poor. Thus, condemned to the very lowest servitude, it is not only treated with indignity, but oftentimes experiences all the misery of harsh and ill usage. Naturally patient and persevering, it is loaded with enormous burthens, or compelled to drag the heaviest weights; and, in order to keep it in motion, its sides or back are goaded by a sharp pointed iron prong. Under such treatment, we cannot be surprised that its native spirit is subdued; and that, sometimes, it should show itself intractable or stubborn. Persons who are in habits of seeing these animals treated with the kindness and attention they deserve, know that they are naturally mild and gentle, and that they undergo a

* *Equus asinus domesticus*.—Linnaeus. L'Ane.—Buffon.

See the Synopsis, p. 67, No. 43.

reasonable share of labour and fatigue, with cheerfulness and alacrity. To the peasantry they are much more serviceable than Horses, since they have not only greater proportionate strength of body, and are more sure of foot, but also because they are infinitely more healthy, and are kept at much less expence. Their constitution is so hardy, that, even in the depth of winter, the most wretched hovel is sufficient shelter for them from the cold; and so temperate are they with respect to food, that they can subsist on such vegetables as almost any other animals would refuse to eat. The thistle and plantain, which generally grow in abundance on waste lands, and along the sides of roads, afford to them a sufficient feast after their day of toil is concluded. If we observe the Ass with attention, whilst grazing on this miserable fare, his whole deportment will be seen marked by mildness and content.

When he is young, he has the general character and appearance of a handsome, sprightly, and even graceful animal; but age, harsh treatment, and excessive fatigue, frequently render him slow, stubborn, and headstrong. He is, notwithstanding, capable of the strongest attachment to his master, and will oftentimes immediately distinguish him from amongst a crowd of other persons. He knows the places where he has lived, and all the roads along which he has been accustomed to travel. When, as is oftentimes the case, he is loaded beyond

yond his strength, he shows it by lowering his head and bending down his ears. If greatly abused, he will frequently open his mouth and draw back his lips in a disagreeable manner. Most of his motions are like those of the Horse. He walks, trots, and gallops; and he can also run with tolerable swiftness for a small distance, but he is soon fatigued by any great exertion of speed.

The voice of these animals is called *braying*; and it is a most harsh and discordant noise. When an Ass begins to bray, it often happens, that if there are any others within hearing, they also immediately exert their voices. This habit was, in several instances, a serious inconvenience to our army in Egypt, when much harassed by the siege of Alexandria. Besides the Camels and Horses, there were a great number of Asses employed in conveying forage for the subsistence of the troops. During the nights, when the soldiers, wearied by the fatigues of the day, were enjoying the few hours of repose that could be allowed them, one of these animals would frequently begin; and, soon afterwards, a serenade of at least a thousand such voices would sound through the whole camp. Vexatious as the noise might be, there was, notwithstanding, something extremely ludicrous in such a concert, in which, occasionally, all the numerous other animals around, both birds and beasts, joined their efforts. When the Asses were at last conveyed to Rosetta, it was to the great joy of every person belonging to the troops.

Neglected and abused as Asses are in the British islands, they have been held in great esteem in other countries, even from the earliest periods of antiquity. In the Sacred Writings, and especially in the Old Testament, they are spoken of as in general use throughout all the eastern countries, both for the saddle and as animals of draught and burthen. Amongst the Romans they were held in the highest estimation, as is obvious from the great sums of money that were sometimes paid for them, in comparison with other animals. Pliny speaks of a male Ass that was purchased at a price exceeding three thousand pounds sterling of our money.

“From the notices (says Dr. Anderson) that incidentally occur in the course of reading, it would have seemed natural to infer, that there must be different breeds of Asses, which possess qualities extremely different the one from the other; and that, instead of forming a judgment of the whole species from the particular breed that we find in this country, and conceiving the things that are told of other breeds to be entirely fabulous, because we find that they do not accord with those that are bred here, we ought rather to be convinced that we had fallen into a bad breed, which, with care, might, no doubt, be very greatly improved*.

* Anderson's Recreations in Agriculture, &c. iv. p. 321.

By far the finest breed of Asses, at this time known in the world, are those of Spain. They are large, strong, elegant, and stately animals, often fifteen hands, or more, in height. The best of this breed sell, in Spain, at very high prices, sometimes for as much as a hundred guineas each, and upwards. In other countries of Europe, the Ass is nearly as much neglected as it is in Great Britain. In Sardinia there is a race of Asses that are very little larger than Dogs: they seldom exceed two feet in height, and are in all respects proportionally small.

That the Ass is not naturally so stupid an animal as many people are inclined to think it, we have sufficient evidence in its being susceptible of very considerable educational attainments. We are informed by Leo Africanus, that Asses may be taught a kind of dance, in which they will keep perfect time to music; and to perform a great variety of other entertaining feats. Gesner asserts, that he was himself witness to some very singular actions of one of these trained Asses. He says, that whilst the Ass continued to dance, he three times changed his time, and adopted that of a new air played to him. He could walk erect with great appearance of ease. On a sudden, as if his pleasantry was changed to grief, he threw himself on the ground and seemed to be dead. Though he was kicked and beaten, he could not be induced to stir, till a signal was made to him by his master. On being ordered

ordered to salute the company, he turned his head and eyes towards them, and moved one of his fore-feet. What was considered very remarkable in the actions of this animal, and greatly astonished every person present, was, that on a certain signal, he leaped through a large wooden hoop, like a Dog. The exhibition concluded with several persons throwing on the floor, handkerchiefs or gloves, all of which the animal carefully took up in his mouth and carried to his master*.

The natural duration of life in the Ass is understood to be from twenty-five to thirty years. These animals are about four years before they attain maturity. The period of gestation, in the females, is said by M. de Buffon to be twelve months; and, by Linnæus, to be about two hundred and ninety days. The produce is generally one foal; but sometimes they have been known to bring forth two!

With respect to their diseases, these hardy animals are believed to have much fewer than the Horse. The ancients were acquainted with none except the *glanders*; and this is by no means a common disease amongst them.

From its hardness and elasticity, the skin of the Ass is capable of being used for various purposes. It is manufactured into shoes, heads for drums, and,

* Gesner, Hist. Quad. p. 5.

when varnished over in a peculiar manner, is cut into leaves for pocket-books. The inhabitants of some of the eastern countries, make of that part which is about the rump, what they call *sagri* or *shagreen*. The flesh of the Wild Ass is considered in Tartary to be as excellent food as that of the Boar; but, although the flesh of the domestic animals is eaten in several countries of the world, M. de Buffon asserts that it is extremely bad, and harder than that of the Horse. The milk is light, easy of digestion, and so highly nutritious as to be recommended as a specific in many disorders. In some parts of the continent, it is occasionally used as a cosmetic.

The male of this species is, in Wales, called *asyn*; the female, *asen*: in France, *ane* and *anesse*: in Italy, *asino* or *miccio*, and *miccia*: in Spain, *asno* or *borrico*, and *borrica*: in Portugal, *asno* or *burro*, and *asna* or *burra*: in Germany, the male and female are both called *esel*: in Holland, *eezel*: in Sweden, *asna* or *æsna*: in Denmark, *asen-esel*; in Russia, *osel*.

THE MULE*

AND

THE HINNY†

THE former of these animals is the hybrid produce of the Ass and the Mare; and the latter, of the Horse and the female Ass.

The Mule is considerably the largest of the two; taking more the dimensions and appearance of the Mare than the Ass. Its fore parts are better shaped, the chest is broader and more beautiful, the sides rounder, the rump fuller, and the haunches more smooth. In the head, and the other extremities, it has some resemblance to the male parent.

The Hinny, on the contrary, partakes greatly of the dimensions and appearance of the mother Ass; for, in each animal, these seem to depend more on the female than the male parent. Its chest is thinner, its back more ridged, and rump more sharp. The head is longer, and not so thick in

* *Equus asinus mulus*.—Linnaeus. *Le Mulet*.—Buffon.

See the Synopsis, p. 68.

† *Equus asinus hinnus*.—Linnaeus. *Le Bardeau*.—Buffon.

See the Synopsis, p. 69.



Mule.

Howitt.



proportion as that of the Ass; while the head of the Mule is both shorter and thicker than that of the Mare. The tail of the Hinny is covered with longish hairs, whilst that of the Mule has little else than short hair. The ears of the Mule are longer than those of the Horse; and the ears of the Hinny are shorter than those of the Ass. In the form, therefore, of the head, tail, and ears, (and the same has likewise been observed with respect to the legs,) each animal seems to hold more by the male than the female.

Of these two animals, the Mule is that which is much the most commonly bred; since, by coupling the Ass with the Mare, a race has been produced, partaking, at the same time, of the hardiness of the Ass, and the size and proportions of the Horse; whilst the Hinny participates so much of the nature and general appearance of the Ass, as to render the breeding of it a matter entirely undeserving of attention. It is less hardy, and less fitted for the various purposes of life, than either the Horse, the Ass, or the Mule.

It has been remarked of both these beasts, that they possess one peculiarity which has not been known to take place in other mongrel breeds; namely, that each has some qualities which are not found in either of the parents, in such an eminent degree

degree as in themselves. The duration of life in the Mule is known considerably to exceed that either of the Horse or the Ass. The animal is also less liable to disease, and capable of much greater bodily exertion, than either; and, being nearly as abstemious as the Ass, it is considered of much greater value, where power and economy are both wanted.

In countries where the breed of Asses is sufficiently large, for obtaining Mules of considerable size, these are preferred to all other animals, for cheapness, durability, and general convenience, as beasts of burthen. In England they have never been propagated to any great extent; and the few that have been reared here, have, in general, been the produce of such diminutive parents, as to exhibit only a puny race, by no means calculated to perform the services that a well managed breed would be capable of. Yet even these, where they have been used, are found to possess many of those highly estimable qualities that are attributed to the Spanish Mules, which are at this day considered to be the finest in the world.

We have one instance, at least, in which their utility has been satisfactorily ascertained in our own country. The huge dray-horses employed at the breweries in the neighbourhood of London, are said to be, in a great measure, adopted on account of their being able, as fillers, to stand the shaking of the slop-carts, and other ponderous loads,

loads, which, the brewers assert, no other breed of Horses could bear. In the place of these Horses, Messrs. Trueman, Harford, and Co. of Limehouse, have, for some time past, used mules in their drays. Each dray is drawn by three Mules, the highest of which does not, perhaps, stand more than fourteen hands. These carry three butts of beer from Limehouse to London: the same weight, precisely, which the London drays carry with three large Horses; and in these the shafts bear, in the same manner, upon the filler, as upon that of the drays drawn by Horses.

The name of the Mule has been proverbially applied to express stubbornness, and ungovernable stupidity; from the animals' being said obstinately to resist ill treatment. It is asserted that the utmost severity cannot compel a Mule to go forward, when it is not inclined to do so of its own accord. But, if gentle usage be, as it is declared to be, sufficient to effect this purpose, it might be considered a fortunate circumstance if all our beasts of burthen were endowed with the same kind of spirit; since, in that case, the feelings of humanity would by no means be so often outraged as they are at present. If, however, our countrymen could only be prevailed with to consider this animal in the light that its qualities justly merit, to pay due attention to its breed, and treat it with gentleness and kind usage, it might, in the course of a few years,

years, be rendered highly serviceable, either for the saddle, for draught, or burthen.

Although both the Mule and the Hinny are so far sterile, that they will not breed with each other, yet M. de Buffon has recorded several instances of their producing young ones with both the parent stocks. He, however, asserts, that this seldom takes place, except in hot climates.

The former of these animals is, in Wales, called *mul*: in France, *mulet*: in Spain, *mulo*, *mula*, *macho*, *azemila*: in Italy, *mulo*, *mácho*, *azemila*, *garannon*: in Portugal, *mula*, *mu*: in Germany, *maulthier*, *maulesel*: in Holland, *muyl-eesel*: in Sweden, *mulasna*: in Denmark, *muul-esel*: in Russia, *laschak*, *mul*, *mesk*.





Howitt.

Swine.

OF SWINE IN GENERAL.

THERE are few tribes of quadrupeds, the animals of which are, on the whole, so filthy in their habits, as the present. They live, for the most part, collected in large droves, in marshes and morasses, wallowing with delight in the most putrid mire, and devouring, with avidity, almost any substances which lie in their way. In their general disposition and manners, they are naturally savage and ferocious. Their weapons of offence are enormous tusks, with which they strive to gore and rip up the bodies of their enemies.

The species best known in Europe is the Wild Boar, the parent stock of all our domestic varieties. There can be no doubt that the forests of Great Britain once sheltered Wild Boars in great numbers; since they are mentioned, both in the ancient Welsh and English laws, as beasts of chase, which were reserved principally for the amusement of the king. In the reign of William the Conqueror, persons convicted of killing these animals, without royal authority, were punished with the loss of their eyes. King Charles the First turned a number of Wild Boars into the New Forest; but, during the civil wars, they were all

H h destroyed;

destroyed ; and some years ago, General Howe did the same in his forests in Hampshire, to the great terror of the neighbouring inhabitants, who soon rose upon and killed them.

All the females of this tribe are very prolific, bringing from four to ten or twelve young ones, and upwards, at a litter.

The muzzle of the Swine terminates in a strong tendinous and moveable snout, by means of which they are enabled to dig up roots, and other aliments, that lie hidden beneath the surface of the ground. In their cloven feet, these animals seem allied to the ruminating quadrupeds ; but in every essential respect, both of external and internal structure, they are perfectly distinct.

THE COMMON HOG*.

OF all the quadrupeds that are inhabitants of Great Britain, either in a native or domestic state, Swine are those, the general manners, disposition, and character of which, are, by far, the most disgusting. Their appetites are so gross, that they devour, with the same eagerness, nearly all sorts

* *Sus scrofa domesticus*.—Linnaeus. *Le Cochon*.—Buffon.

See the Synopsis, p. 70, No. 44.

of food. Even the most putrid and corrupted animal substances do not come amiss to them. This voracity proceeds from their great digestive powers, and the unusual size and capacity of their stomachs. We are informed, that in the stomachs of Wild Boars there have been found pieces of the skins of Deer, and the beaks and claws of birds. They are all exceedingly fond of blood; and instances have occurred of their devouring infant children. Whenever they find any thing humid or succulent, they are said first to lick, and then to swallow it. We are told, that it is common for a whole herd of these animals to stop round a heap of newly dug clay; and although it happen to be but very little unctuous or moist, they will all lick it, and some of them will swallow it in considerable quantity*. Since Swine obtain the chief part of their subsistence by rooting up the earth, their snout, which is very tendinous and strong, is endowed with an extraordinarily nice sense of touch, serving the same purposes as the proboscis of the Elephant, in turning over and examining their food. In order that this may be used to the greatest possible advantage, the neck is remarkably stout and muscular; and the eyes are situated so high up in the head, as to be in no danger from the sub-

* Buffon par Sonnini, xxiii. p. 140.

stances that are moved about by the nose. The sense of smelling in these animals is, likewise, asserted to be peculiarly quick. The extreme thickness of their hide and fat render them almost insensible even to blows; but all their other senses are perfectly good.

Those persons who have attended at all to the manners of Swine, have observed, that they are by no means deficient in sagacity; but the short lives that we allow them, and the general confinement they undergo, entirely prevent their improvement in this respect. We, however, have frequently heard of exhibitions of "*learned Pigs*;" and we know that Toomer, formerly the game-keeper of Sir H. P. St. John Mildmay, actually broke in a black Sow to find game, back, and stand, nearly as well as a Pointer.

This Sow, which was a thin, long-legged animal, (one of the ugliest of the New Forest breed,) when very young, took a great partiality to some Pointer puppies, that Toomer, then under keeper of Broomy Lodge, in the New Forest, was breaking. It played and often came to feed with them. From this circumstance, it occurred to Toomer, (to use his own expression,) that, having broken many a Dog, as obstinate as a Pig, he would try if he could not also succeed in breaking a Pig. The little animal would often go out with the puppies to some distance from home; and he enticed it farther by a sort of pudding made of
barley

barley meal, which he carried in one of his pockets. The other he filled with stones, which he threw at the Pig, whenever she misbehaved, as he was not able to catch and correct her in the same manner that he did his Dogs. He informed Sir Henry Mildmay, who has been so obliging as to supply me with this account, that he found the animal very tractable, and that he soon taught her what he wished, by this mode of reward and punishment. Sir Henry Mildmay says, that he has frequently seen her out with Toomer, when she quartered her ground as regularly as any Pointer, stood when she came on game, (having an excellent nose,) and backed other Dogs as well as he ever saw a Pointer. When she came on the cold scent of game, she slackened her trot, and gradually dropped her ears and tail till she was certain, and then fell down on her knees. So staunch was she, that she would frequently remain five minutes and upwards on her point. As soon as the game rose, she always returned to Toomer, grunting very loudly for her reward of pudding, if it was not immediately given to her. When Toomer died, his widow sent the Pig to Sir Henry Mildmay, who kept it for three years, but never used it, except for the purpose of occasionally amusing his friends. In doing this, a fowl was put into a cabbage-net, and hidden amongst the fern in some part of the park; and the extraordinary animal never failed to point it, in the

manner above described. Sir Henry was, at length, obliged to part with this Sow, from a circumstance as singular as the other occurrences of her life. A great number of Lambs had been lost, nearly as soon as they were dropped, and a person being sent to watch the flock, the animal was detected in the very act of devouring a Lamb. This carnivorous propensity was ascribed to her having been accustomed to feed with the other Dogs, and to eat the flesh on which they were fed. Sir Henry sent her back to Mrs. Toomer, who sold her to Mr. Sykes, of Brookwood, in the New Forest; where she died the usual death of a Pig, and was converted into bacon.

As the animals of the present species require, in this climate, shelter from the cold in winter, they are frequently known to collect straw with their mouths, in order to construct a warm bed, when the wind blows keenly; and to call their companions, by repeated cries, to assist in the work. Notwithstanding their general filthy character, it is singular, that, where they have liberty, their dens or sleeping places are kept more free from filth than those of most other animals. In the state that we usually see them, Swine are excessively stupid and indolent, and, at first sight, seem destitute either of sagacity or sensibility. Few animals, however, when compelled to exert themselves, have more determined courage, or greater sympathy for those of their own species.

The

The moment that one of them utters a signal of distress, all within hearing will run to its assistance. Numerous instances have been recorded in proof of this assertion; but none can be more illustrative than the following. The *Sieur Brûe*, having, in vain, used all possible means to soften the ferocious disposition of a Tiger, that he had bred at Fort St. Louis, on the western coast of Africa, was curious to know how a Hog would be able to defend himself against so large and powerful a beast. He therefore caused one of these animals to be separated from a drove, and the rest to be conveyed to some distance. As soon as the Tiger was loosed, the Hog retired to an angle in the wall of the fort; where, for a very considerable time, he kept the Tiger at bay. At last, he was so closely pressed, that, all at once, he set up a furious scream. This brought the whole drove of Swine to his assistance; and they, all at once, fell on the Tiger with so much fury, that, in order to save himself, he was compelled to spring, out of their reach, into the ditch of the fort*.

It is generally believed that Swine will live to the age of twenty, and even sometimes of thirty years; but very few instances are allowed to occur

* *Labat Voyage Occidentale*, tome, ii. p. 37.

of their attaining so great an age, since it is by no means either profitable or convenient to keep them to the full extent of their time. A gentleman of Selborne, in Hampshire, kept an half-bred Bantam Sow, whose belly literally swept the ground, till she was advanced to her seventeenth year; and at this period she began to exhibit some signs of old age, by the decay of her teeth, and the decline of her fertility. This animal afforded a surprising instance of the extremely prolific nature of Swine. For about ten years, she regularly produced two litters in the year, each consisting of about ten, and once of above twenty Pigs: but in the latter case, as there were nearly double the number of Pigs to that of the teats, many, of course, died. At the age of fifteen, her litter began to be reduced to four or five; and such a litter she exhibited when in her fattening-pen. At a moderate computation, this Sow was allowed to have been the fruitful parent of no less than three hundred young ones! She was killed in the spring of 1775*.

The profits that arise from the breeding of Swine are so universally acknowledged, that there are few, even of our peasantry, who are not anxious to keep and fatten one or two of these

* White's Works in Natural History, i. p. 359.

animals. It has been long proved, that, of all flesh-meat, pork is the best adapted to curing and preservation with salt; and it also appears that the labouring classes of people can subsist longer upon this diet, without desire of change, than upon any other kind of flesh whatever. In various parts of England, even the farmers themselves very rarely taste, or desire to taste, any other.

The fat of Swine differs from that of almost every other quadruped, not only in its consistence and quality, but in its situation in the body of the animals. The suet of the Ox, Sheep, Deer, and other ruminating quadrupeds, is found only at the extremities of the flesh. The fat of those animals which have no suet, such as the Dog, Cat, Horse, &c. is pretty equally mixed with the flesh; but the fat of the Hog is neither mixed with the flesh, nor collected at its extremities, but covers the animal all over, and forms a thick, distinct, and continued layer betwixt the flesh and skin, somewhat like the blubber in whales. This fat has the name of *lard*, and, when detached from the flesh, is applied to various domestic uses.

The great weight to which some of the *Berkshire Hogs* have been fed, would seem altogether incredible, had it not been so well attested. Mr. Young, in one of his Tours, mentions one which was fed to upwards of eighty-one stone. A Pig, killed at Congleton, in Cheshire, in the month of
January,

January, 1774, measured, from the nose to the end of the tail, three yards eight inches, and in height four feet and a half. When alive, it weighed 1410, and when killed and dressed, 1215 pounds.

Notwithstanding the excellent flavour of well-fed pork, and its wholesomenes as food, many persons have such an antipathy to it from nature, habit, or prejudice, that they not only refuse to eat it, but are not able to bear even the sight or smell of it when placed near them at table. The Jews and Mahometans, from a religious principle, abstain from it as food, and consider themselves, in some measure, defiled even by touching it. The inhabitants of China, on the contrary, are so excessively fond of pork, that multitudes, from this partiality only, are said to have been prevented from joining themselves under the institutions of Mahomet.

There are few parts of the bodies of Swine which may not be converted to some useful purpose. Their skins, when properly dressed, are in great request by saddlers, bookbinders, and other artisans. The blood, feet, tongue, and fat, are all used as food. The bristles are made into large brushes for painters, and are also employed by shoemakers, in the place of needles.

With respect to the diseases of Swine, so little attention seems hitherto to have been paid, that even the best writers on live stock have been able to afford us scarcely any information whatever.

It

It is known that the leaves of the yew, and both the leaves and roots of hemlock, are deadly poison to them.

In Wales the male is called *baedd*, and the female *hwch* : in France, *verrat*, and *truye* : in Italy, *verro*, and *porca* : in Spain, *berraco*, and *puerca* : in Portugal, *berrao*, and *porca* : in Germany, *eber* and *su* : in Holland, *beer* and *soch* : in Denmark, *orn*, and *soë*.

A
SYNOPSIS
OF
BRITISH QUADRUPEDS.

BY THE REV. W. BINGLEY, A.M.

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BRITISH

1871

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BRITISH QUADRUPEDS.

ALL viviparous quadrupeds have a dorsal spine, formed by a series of vertebræ. They likewise have warm blood; and two auricles and two ventricles to the heart. They produce their offspring alive, and nourish them from mammæ or lactiferous teats.

The British genera are subdivided into quadrupeds,

** With Nails or Claws.*

1. Having four front-teeth, and two canine-teeth in each jaw. PRIMATES.
2. Having two, six, or ten front-teeth, and two canine-teeth in each jaw. FERÆ.
3. Having two front-teeth in each jaw, and no canine-teeth. GLIRES.

*** With Hoofs.*

1. Having no front-teeth in the upper jaw. PECORA.
 2. Having front-teeth in both jaws. BELLUE.
-

** With Nails or Claws.*

1. Four front-teeth, and two canine-teeth in each jaw.

LINNEAN ORDER I. PRIMATES.

Front teeth wedge-shaped, for cutting food; those of the upper jaw four in number, and parallel. The females have two (a few species four) pectoral teats.

THE BAT TRIBE. Teeth all erect, sharp pointed, and situated near together: fore-toes or fingers lengthened, and connected by membranes, which extend round the posterior part of the body, and perform the office of wings. *VESPERTILIO.* Linn. Syst. Nat. Gmel. genus 4. tom 1. p. 45.

1. The COMMON BAT. Tailed; no membrane on the nose, ears smaller than the head. *Vespertilio murinus.* Linn.

Length, to the tip of the tail, about 3 inches; and breadth of the expanded membranes 9 inches. *Weight* from 120 to 160 grains. *Ears* four lines in length, each having, in front, an *inner valve*, or secondary ear, slender, pointed, and minute. *Eyes* so small as to appear like minute black points. No *teeth* immediately in front of the upper jaw.

Extremity of the *muzzle* blackish, and, on the upper part, almost naked. *Colour* of the *fur*, which is very thick and soft, nearly the same as that of the common mouse, but with a slightly reddish tinge. *Wing membranes* semi-transparent, of a blackish colour, and naked. *Smell* not fetid. W. B.

Common in ruinous buildings. Flies about in shady lanes, &c. during the evenings of summer and autumn.

Vespertilio caudatus, naso oreque simplici, auriculis capite minoribus.—*Vespertilio murinus.* Linn. Syst. Nat. Gmel. i. p. 48.

Vespertilio naso oreque simplici, auriculis longitudine capitis.—*Vespertilio murinus.* Erxleben, Syst. regn. animal, gen. 16, sp. 2, p. 143.

Vespertilio murinus. Common Bat. Kerr's Animal Kingdom, p. 94.—Turton i. p. 2.

Vespertilio

Vespertilio major. Brisson, Syst. regn. animal, p. 224.

Vespertilio minor vulgaris. Klein, quad. disp. p. 61.

Vespertilio. Gesner, hist. av. p. 766.—Ruysch, theat. animal, i. pa. 2. p. 34, tab. 20.—Raii Syn. quad. p. 243.

La chauve Souris. Buffon par Sonnini, xxv. p. 310, pl. 13. f. 1, 2.

La chauve Souris ordinaire. Cuvier's Tab. Element. de l'hist. nat. p. 105.

Common Bat. Pennant's British Zoology, i. p. 148, No. 41.—Shaw's General Zoology, i. p. 123.—Smellie's Buffon, iv. p. 322, tab. 18, fig. 1, 2.

Short-eared English Bat. Edwards's Birds, tab. 201, fig. 2.—Bewick's Quadrupeds, 5th edition, p. 510.

Little Bat. White's Works in Natural History, i. p. 130.

2. THE LONG-EARED BAT. Tailed, no membrane on the nose, ears with inner valves, and larger than the head.

Vespertilio auritus. Linn.

Length, to the tip of the tail, in different individuals, from $1\frac{3}{4}$ to $3\frac{1}{2}$ inches; and *breadth* of the expanded membranes from 7 to 11 inches. *Weight* of the largest about 190 grains. *Ears* about half the length of the body, each having, in front, a large *inner valve*, or secondary ear. Along the inner sides of the external ears there is a fold, about a line in breadth at the bottom, which extends almost to the tip; and near the bottom of each fold is a small angular process. External ears of considerable width, rounded, and broad at the tip. These are entirely naked, except along their inner edges, and along the edges of the folds, which have each a row of scattered and extremely slender hairs. *Eyes* large and brilliant, comparatively with those of the common bat. *Muzzle* long: orifices of the *nostrils* large, and somewhat shaped like an S. No *teeth* immediately in front of upper jaw.

Fur of a brownish grey colour, but much darker on the upper than the under parts of the body. *Smell* not fetid. W. B.

Common in ruinous buildings; and flies about in shady lanes, &c. during the evenings of summer and autumn.

Vespertilio caudatus, ore nasoque simplici, auriculis duplicatis, capite majoribus.---*Vespertilio auritus.* Linn. Syst. Nat. Gmel. i. p. 47.---Erxleben, Syst. regn. animal. gen. 16, sp. 1, p. 141.

Vespertilio auritus. *Long-eared Bat.* Turton i. p. 25.---Kerr, p. 93.

Vespertilio minor. Brisson. regn. animal. p. 226.

Vespertilio vulgaris, auriculis duplicibus. Klein, quad. desp. p. 61.

Vespertilio auritus quaternis. Ruysch. theat. animal. i. pa. 2, p. 34.

L'oreillar. Buff. Sonn. xxv. p. 320. pl. 13, fig. 4.

L'oreillard. Cuv. Tab. Element, p. 104.

Long-eared Bat. Penn. Brit. Zool. i. p. 147, tab. 40.---Shaw's Gen. Zool. i. p. 123, tab. 40.---Bingley's Animal Biography, 3d edit. i. p. 97.---Smellie's Buffon, iv. p. 322, tab. 90, fig. 2.

Common Bat. Bradley's Phil. Account of the Works of Nature, p. 122, tab. 13.

Great-eared Bat. Speculum Linneanum, tab. 7.

Long-eared English Bat. Edwards's Birds, tab. 201, fig. 2.---Bew. Quad. 5th edit. p. 512.

3. THE NOCTULE OR GREAT BAT. Tailed, no membrane on the nose, ears oval, with small inner valves.
Vespertilio noctula. Linn.

Length, to the tip of the tail, about $5\frac{1}{2}$ inches; and *breadth* of the expanded membranes, $14\frac{1}{2}$ inches. *Head* large. *Nose* slightly bilobated. *Ears* short, broad, and rounded; each with a small but conspicuous *inner valve*. *Shoulders* broad and muscular; and *whole body*.

body plump and fleshy. Upper part of *wing membranes* slightly hairy on the inside. No *teeth* immediately in front of the upper jaw.

Fur extremely soft and sleek; in some individuals of a bright chesnut colour, but in others considerably darker, so as even to be cinereous.

Wing membranes black. *Smell* fetid. W. B.

Uncommon. Flies high in the air; and seldom seen except from the beginning of May to about the end of July. It has been observed in Hampshire, Cambridgeshire, Suffolk, and Surrey.

Vespertilio caudatus, naso oreque simplici, auriculis ovalibus operculatis, operculo exili.---*Vespertilio noctula*. Linn. Syst. Nat. Gmel. i. p. 48.

Vespertilio naso oreque simplici, auriculis capite brevioribus, corpore cano.---*Vespertilio noctula*. Erxleben, Syst. regn. animal. gen. 16, sp. 3, p. 146.

Vespertilio noctula. Great Bat. Turton i. p. 25.---Kerr, p. 95.

La Noctule. Buff. Sonn. xxv. p. 321, pl. 14, f. 1.---Cuv. Tab. Element. p. 105.

Noctule Bat. Shaw's Gen. Zool. i. p. 130.---Kerr's anim. King. p. 95.---Smellie's Buffon, iv. p. 322, tab. 91, fig. 1.

Great Bat. Penn. Brit. Zool. i. p. 146.---White's Works, i. p. 130.

4. THE BARBASTELLE BAT. Tailed, cheeks full or turgid, and bearded, ears large and angulated at the lower part. *Vespertilio barbastellus*. Linn.

Length, to the tip of the tail about 2 inches; and *breadth* of the expanded membranes $10\frac{1}{2}$ inches. On the upper part of the *muzzle* a naked, hollow, or sunken mark, of singular shape, which extends to the ears, and in front of which are situated the nostrils. *Ears* large, rounded at the extremity, and so broad that their inner edges

touch each other over the nose, and thus conceal the upper part of the face: towards their lower part they are angulated. *Inner valves* conspicuous. *Cheeks* hairy, and full or turgid. *Muzzle* very short: *nose* much flattened. *Eyes* so situated as to be within the bases of the ears. No *teeth* immediately in front of either jaw.

Fur of the *upper parts* of the body much longer than below, and of a blackish brown colour. *Fur* of the belly of a mixed grey and brown. W. B.

A single individual was caught in one of the gunpowder-mills, at Dartford, in Kent.

Vespertilio caudatus, buccis elatis pilosis, auriculis magnis inferius angulatis.---*Vespertilio barbastellus.* Linn. Syst. Nat. Gmel. i. p. 48.

Vespertilio buccis barbatis, auriculis longioribus, frontem tegentibus.---*Vespertilio barbastellus.* Erxleben, Syst. regn. animal, gen. 16, sp. 4, p. 140.

Vespertilio Barbastellus. *Barbastelle Bat.* Turton, i. p. 25.---Kerr, p. 95.

La Barbastelle. Buff. Sonn. xxv. p. 324, pl. 14, fig. 3.

Barbastelle Bat. Shaw's Gen. Zool. i. p. 133 ---Smellie's Buffon, iv. p. 323, tab. 92, fig. 1.---Sowerby's British Miscellany, tab. 5.

5. THE HORSE-SHOE BAT. Tailed; on the nose a membrane, somewhat resembling in shape a horse's shoe; ears as long as the head, without inner valves; tail half the length of the body. *Vespertilio ferrum equinum.* Linn.

Length, to the tip of the tail, $3\frac{1}{2}$ inches; and *breadth* of *expanded membranes* 14 inches. The *face* has a singular appearance, from a *membranaceous appendage*, somewhat in form of a horse's shoe, which surrounds the nose and upper lip: this is pointed at the extremity, and its lower part forms deep furrows on the nose, bordered by a narrow

narrow and very thin flap of skin. *Teeth*, and particularly the canine-teeth, much larger and more strong in this than in any others of the British bats. *Ears* about the length of the head, broad at the base, and at their tips sharp-pointed: they incline backward, and have no inner valves. The *females* have each *four nipples*, of which two are seated on the breast, and two betwixt the hinder legs.

Fur long, thick, and very soft; of deep cinereous colour above, and whitish below. *Ears*, *tail*, and *membranes* nearly black. W. B.

Found about the gunpowder-mills, at Dartford, in Kent.

Vespertilio caudatus, naso ferro equino simili, auribus caput æquantibus non operculatis, cauda dimidia corporis longitudine.---*Vespertilio ferrum-equinum.* Linn. Syst. Gmel. i. p. 50.

Vespertilio naso foliato ferri equini æmulo.---*Vespertilio ferrum-equinum.* Erxleben, Syst. regn. animal, gen. 16, sp. 13, p. 154.

Vespertilio ferrum-equinum. *Horse-shoe Bat.* Turton, i. p. 27.---Kerr, p. 99.

La Chauve-souris a fer-à-cheval. Buff. Sonn. xxv. p. 324, pl. 15, fig. 1, 2. pl. 13. fig. 3.

La fer-à-cheval. Cuv. Tab. Element. p. 105.

Horse-shoe Bat. Penn. Brit. Zool. i. p. 147, tab. 14, fig. 1, 2, 3.---Shaw's Gen. Zool. i. p. 131.---Smellie's Buffon, iv. p. 324, tab. 90, fig. 1 and 93, fig. 1.

* *With Nails or Claws.*

2. Two, six, or ten front-teeth, and two canine-teeth in each jaw.

ORDER II. FERÆ.

None of the animals of the second Linnean order, BRUTA, are native inhabitants of the British islands.

Upper front teeth six in number, and somewhat sharp-pointed: one canine-tooth on each side of both jaws.

THE SEAL TRIBE. Upper front-teeth six, sharp-pointed, parallel to each other, the two outermost larger than the rest: lower front teeth somewhat blunt, parallel, distinct, and equal: tusks, one on each side of both jaws, twice the length of the front teeth, the upper ones distant from the front teeth, the lower ones from the grinders: grinders five on each side above, and six below, narrow and tricuspidate: no external ears: hind-feet extending backwards, and connected together or fettered. *PHOCA*. *Linn. Syst. Nat. Gmel. gen. II. i. p. 62.*

Head, generally short, and *muzzle* broad. *Body* thickest about the shoulders, and from thence tapering gradually to the tail. W. B.

6. **THE COMMON SEAL.** No external ears, neck smooth, the body dark coloured. *Phoca vitulina*. *Linn.*

Length

Length from 4 to 6 feet. *Head* large and round, the anterior part much like that of the otter. *Muzzle* broad and flat: *nose* somewhat prominent. *Whiskers* very strong, each bristle waved through its whole length. No external ears; but the place of each *auditory hole* marked by slight elevation of the border of the orifice. *Eyes* nearer the ears than the muzzle; and each furnished with a *winking membrane*. *Tongue* bifid at the tip. *Neck* short. *Feet* so short as, in some positions of the animal, to be scarcely perceptible. *Toes* enveloped in a membrane; and each having a strong, and somewhat cylindrical *nail* or claw, black above and whitish beneath. Of the *toes of the fore-feet*, the first or innermost are the longest; and the rest diminish gradually to the outer ones, which are the shortest of the whole. *Toes of the hind feet* enveloped in a membrane considerably longer and wider than the membranes of the other feet: toes themselves also larger. Of these, the first is the biggest and longest: the fifth somewhat smaller: the second and fourth are shorter than the fifth, and longer than the third, which is the shortest of the whole. *Nails* of the hind-feet not so large as those of the fore-feet. *Tail* very short.

Body clad with short *hair*, at roots of which is a fine and close down. *Colour* of hair different in different individuals. Sometimes it is grey, sometimes brown or blackish, and sometimes blotched or spotted with brown or yellow. W. B.

Not uncommon about the sea-shores of the north of Scotland and Ireland; but rare about those of the southern counties of England.

Phoca capite inauriculato et cervice lævi, corpore fusco.---*Phoco vitulina*. Linn. Syst. Nat. Gmel. i. p. 63.---Erxleben, Syst. regn. animal. gen. 64, sp. 4, p. 583.

Phoca capite lævi, cervice retusiuscula, naso mediocri, corpore sub cylindrico, vibrissis undulatis medulla concolori.---*Phoca vitulina*. Fabricii, Fauna Groenlandica. p. 9.

Phoca vitulina. *Sea Calf*. Turton, i. p. 39.---Kerr, p. 123.

Phoca. Gesner. aquat. p. 702.---Ruysch, i. pa. 156.---Raii. syn. quad. p. 189.

L'Phoque

Le Phoque commun. Buff. Sonn. xxxiv. p. 68, tab. 2, fig. 2.---Cuv. tab. Element. p. 171.

Common Seal. Penn. Brit. Zool. i. p. 137, tab. 37.---Shaw's Gen. Zool. i. p. 257, tab. 70.---Kerr, p. 123.---Smellie's Buffon, vii. p. 336, tab. 148. Bing. Anim. Biog. 3d Edit. i. p. 184.

7. THE PIED SEAL. No external ears, neck smooth, middle toe of each fore-foot shorter than any of the others, hind-feet lunated, body dark variegated with white. *Phoca bicolor.* Shaw.

The *length* of a Pied Seal described by M. de Buffon, in one of the supplementary volumes of his work, was $7\frac{1}{2}$ feet: the *girth* round the shoulders 5 feet; and at the tail $1\frac{1}{2}$ feet. The *eyes* were large, and of a brown colour. The *auditory holes* were each about a line in diameter. The *whiskers* were very thick and strong, somewhat resembling the softer bones of fish. Of the *five toes of the fore-feet*, the middle one was the shortest, and the two outer ones were the longest. The *nails* were black and somewhat curved. Of the *hind-feet* the middle toe was likewise the shortest. These feet were thick and fleshy by the sides of the animal, slender towards the middle, and jagged along their edges. The *nails* had been all chafed off. The *tail* was about four inches long, and at the upper part about three inches in breadth.

The *hair* was very short, thick, and bright, of a brown colour, mixed with grey, particularly on the head and neck, which appeared almost as if spotted. On the belly there was a large white mark, extending from the flanks, and terminating behind in a point.
BUFFON.

A Pied Seal described by Mr. Pennant had its *nose* taper and lengthened. The *toes of the fore-feet* were very distinct; and the *nails of the hinder ones* extended to the margin of the membrane, which, when stretched out, was somewhat crescent shaped.

The general colour of this animal was black, with the hind part of
the

the head, the throat, and neck white, and a white spot behind each fore-leg. PENNANT'S QUADRUPEDES.

This, the only individual ever remarked in Great-Britain, was caught in the river Dee, near Chester, in 1766.

Phoca nigra inauriculata, albo varia, naso elongato, pedibus posterioribus lunatis.---*Phoca bicolor.* Shaw's Gen. Zool. i. p. 254, tab. 70.

Le Phoque à ventre blanc. Buff. Sonn. xxxiv. p. 54, tab. 1, fig. 1.

Pied Seal. Penn. Quadr. ii. p. 273.---Shaw's Gen. Zool. i. p. 254, tab. 70, 71.

The Seal. Bew. Quad. 5th edit. p. 505.

8. THE GREAT SEAL. No external ears, head smooth, body blackish. *Phoca barbata.* Linn.

Length, from ten to twelve feet. *Weight* sometimes exceeding 80lb. *Head* somewhat elongated and smooth. *Muzzle* broad; *lips* loose. *Whiskers* long; the bristles strong, horny, flexile, pellucid, and not waved, as in the Common Seal. *Auditory holes* large. *Eyes* large, but not prominent: *pupils* blackish and circular: *irides* brown. *Tongue* bifid at the tip. *Fore-feet* long, the middle toe longer, and the inner toe shorter than any of the rest. *Skin* extremely thick.

The young animals have tolerably close set *hair*; but the old ones are generally naked. The *colour* varies with their age. The young ones are dark on the upper parts, and white below: they next become blackish all over: the back then attains a lighter colour; and in old age they are entirely black. FAUNA GROENLANDICA.

Not very uncommon about the northern coast of Scotland.

Phoca capite lævi inauriculato, corpore nigricante.---*Phoca barbata.* Linn. Syst. Nat. Gmel. i. p. 65.---Erxleben. Syst. regn. animal, gen. 64, sp. 8, p. 590.

Phoca pedibus anticis manus hominis referentibus pollice brevior

breviore, vibrissis longis albis integris, apice curvis.---
Phoca barbata. Fabricii, Fauna. Groenl. p. 15.

Phoca barbata. Great Seal. Turton. 1. p. 39.---
 Kerr, p. 126.

Le grand Phoque.---*Le Phoque de M. Parson.* Buff.
 Sonn. xxxiv. p. 50, tab. 1, fig. 3.

Great Seal. Penn. Brit. Zool. i. p. 136.---Shaw's Gen.
 Zool. i. p. 259, tab. 74.

Long-bodied Seal. Parsons in Phil. Tran. No. 469,
 p. 383, tab. 1.

Large Seal of the Northern Ocean. Smellie's Buffon,
 vii. p. 342.

THE DOG TRIBE. Upper front-teeth six, those at the sides longer than the intermediate ones, which are lobated: lower front-teeth six, the lateral ones lobated: canine-teeth curved, on each side in both jaws: grinders, six in the upper, and seven in the lower jaw, (or more than in any other animals of the same order.) *CANIS.* Linn. *Syst. Nat. Gmel. gen.* 12. i. p. 65.

Tongue smooth; *toes*, five on the fore and four on the hind feet, the *claws* blunt, not hooked, nor retractile; the *feet* rest upon the toes only. *Females* have ten *teats*, four on the breast, and six on the belly. W. B.

9. THE COMMON DOG. Tail recurved, leaning towards the left side. *Canis familiaris.* Linn.

Canis caudâ sinistrorsum recurvata.---*Canis familiaris.* Linn. *Syst. Nat. Gmel. i.* p. 65.---Erxleben, *Syst. regn. animal, gen.* 45, sp. 1, p. 531.

Canis

Canis familiaris. Faithful Dog. Turton i. p. 41.---Kerr, p. 129.

Canis Domesticus. Brisson. regn. animal, p. 235.

Canis proprie dictus. Klein. quad. desp. p. 68.

Canis. Gesner, hist. quad. 160. 249. 250.---Ruysch, i. p. 1. p. 22.---Raii, Syn. quad. p. 175.

Le Chien. Buff. Sonn. xxiii. p. 163.---Cuv. tab. element. p. 120.

Faithful Dog. Penn. Quadr. i. p. 235.---Penn. Brit. Zool. i. p. 59.

Common Dog. Shaw's Gen. Zool. i. p. 273.---Smellie's Buffon, iv. p. 1.---Bing. Anim. Biog. 3d edit. i. p. 203.

VAR. 1. *The Shepherd's Dog*. Ears erect, tail covered underneath with long hair. *Canis familiaris domesticus*. Linn.

General form and appearance rude and inelegant. *Ears*, in some individuals, only half erect. *Tail* long, bushy, and somewhat curled at the end. *Varies in colour*. W. B.

Canis auriculis erectis, cauda subtus, lanata.---*Canis (familiaris) domesticus*. Linn. Syst. Nat. Gmel. gen. 12, sp. 1, var. δ . 1. p. 66.

Canis Pastoralis, or Shepherd's Dog.---Penn. Brit. Zool. i. p. 67.

Canis $\delta\mu\epsilon\gamma\delta\varsigma$ Domesticus.---*A Curre or House Dog*. Raii. Syn. quad. p. 177. No. 82.

Le Chien de berger. Buff. Sonn. xxiii. p. 203.---tab. 10, fig. 1.

Shepherd's Dog. Shaw's Gen. Zool. i. p. 277, tab. 75. Kerr. p. 120.---Turton. i. p. 41, n. 1.---Smellie's Buffon, iv. p. 20, tab. 27.---Penn. Quadr. i. p. 238.---Bew. Quad. 5th edit. p. 327.

VAR.

VAR. 2. *The Water Dog.* Hair long and curled, like the fleece of a sheep. *Canis familiaris aquaticus.* Linn.

Of this variety there are two kinds; but they differ only in size, the one being nearly as large again as the other. Muzzle somewhat short. Feet more webbed than in most other dogs. W. B.

Canis familiaris minor. Size small, hair long and curled, and about the ears longer than elsewhere, and hangs downwards. Linn.

Canis pilo crispo longo instar otis.---*Canis (familiaris) aquaticus.* Linn. Syst. Nat. Gmel. gen. 12, sp. i. var. 2. i. p. 66.

Canis minor pilo crispo longo, circa auriculas longiore et recta propendente.---*Canis (familiaris) minor.* Linn. Syst. Nat. Gmel. gen. 13, sp. 1, var. . i. p. 66.

Canis aquaticus, or FYNDEE. Penn. Brit. Zool. i. p. 67.

Canis aviarius aquaticus, a WATER SPANIEL. Raii. Syn. quad. p. 77, n. 6.

Le Grand Barbet.---*Le Petit Barbet.* Buff. Sonn. xxiii. p. 209, pl. 16, 17.

Water Dog. Shaw's Gen. Zool. i. p. 279.---Turton, i. p. 41, n. 5, 6.

Great Water Dog.---*Lesser Water Dog.* Kerr. p. 131.---Smellie's Buffon, iv. p. 20, tab. 36, 37.---Penn. Quadr. i. p. 240.---Bew. Quad. 5th edit. p. 360.

Water Spaniel. Penn. Brit. Zool. i. p. 60.

VAR. 3. *The Spaniel.* Ears pendulous and woolly. *Canis familiaris extrarius.* Linn.

Hair long on all parts of the body, but particularly on the breast; beneath the belly, and at the back of the legs. *Ears* of considerable length. W. B.

Canis auriculis longis lanatis pendulis.---*Canis* (*familiaris*) *extrarius*. Linn. Syst. Nat. Gmel. gen. 12, sp. 8, var. 9. i. p. 66.

Canis aviarius seu Hispanicus campestris, a LAND SPANIEL. Raii Syn. quadr. p. 177. n. 5?

Canis Hispaniolus, or SPANIEL. Penn. Brit. Zool. i. p. 66.

L'Epagneul. Buff. Sonn. xxiii. p. 209, tab. 17, fig. 1.

Spaniel. Kerr, p. 131.---Turton, 1. p. 41, n. 8.---Daniel's Rural Sports, 8vo. edit. ii. p. 2, tab. p. 294.---Smellie's Buffon, iv. p. 20, tab. 37, fig. 1.---Penn. Quadr. 1. p. 240.---Bing. Anim. Biog. 3d edit. i. p. 127.

VAR. 4. *The Setter*. *Canis familiaris index*.

Index or Setter. Penn. Brit. Zool. i. p. 66.

Canis venaticus aviarius. Raii. Syn. Quad. p. 177?

English Spaniel.

Setter. Daniel's Rural Sports, 8vo. edit. ii. pa. 2, p. 287, tab. p. 144.

Old English Setter. Daniel ii. pa. 2, tab. p. 287.

VAR. 5. *The Pointer*. *Canis familiaris avicularis*. Tail truncated, or appearing as if part had been cut off. Linn.

Canis caudâ truncatâ.---*Canis* (*familiaris*) *avicularis*, Linn. Syst. Nat. Gmel. gen. 12, sp. 1, var. v. i. p. 68.

Pointer. Shaw's Gen. Zool. i. p. 282.---Kerr, p. 134.---Turton, i. p. 42, n. 19.---Daniel's Rural Sports, 8vo. edit. ii. pa. 2, p. 292; four excellent figures.

VAR. 6. *The Hound.* Ears smooth and pendulous; on each hind-foot a spurious claw, called a dew-claw. *Canis familiaris sagax.* Linn.

Canis auriculis pendulis, digito-spurio ad tibias posticas.---*Canis (familiaris) sagax.* Linn. Syst. Nat. Gmel. gen. 12, sp. 1, var. α. i. p. 67.

Canis venaticus sagax, ferarum indagator et sectator, qui duplex est, major, AN HOUND dictus, et minor A BEAGLE. Raii. Syn. quad. p. 177.

Le Chien Courant. Buff. Sonn. xxiii. p. 209, pl. 11.

Canis Leverarius, or HARRIER. Penn. Brit. Zool. i. p. 61.

Hound. Shaw's Gen. Zool. i. p. 280.---Turton, i. p. 41, n. 17.---Smellie's Buffon, iv. p. 20, tab. 31, 32.---Penn. Quadr. i. p. 239.---Bing. Anim. Biog. 3d edit. i. p. 220.

German Hound. Kerr, p. 133.

Harrier. Daniel's Rural Sports, 8vo. edit. i. tab. p. 379.---Penn. Quadr. i. p. 240.

Beagle. Daniel, i. tab. p. 397.

Foxhound. Daniel, i. tab. p. 56, and 213; all excellent figures.

VAR. 7. *The Bloodhound.* *Canis familiaris sanguinarius.*

Size of a very large Hound. Snout more pointed than that of the hound, but widening considerably towards the after part of the jaw. Ears erect.

Colour generally deep tan or reddish, with a black spot over each eye.

Canis sanguinarius, or BLOODHOUND. Penn. Brit. Zool. i. p. 61.---Raii. Syn. quadr. p. 177.

Canis Scoticus. Bloodhound. Kerr, p. 133.

Bloodhound. Shaw's Gen. Zool. i. p. 281.---Turton, i. p. 41, n. 18. Bing. Anim. Biog. 3d edit. i. p. 221.

VAR. 8. *The Irish Greyhound*. Larger than a Mastiff, body arched, snout slender. *Canis familiaris Hibernicus*. Linn.

Colour generally brown and white, or black and white.

Canis levinarius or *lorarius*: THE LEVINER or LYEMMER. Penn. Brit. Zool. i. p. 65.

Canis Hibernicus, THE IRISH GREYHOUND. Raii. Syn. quadr. p. 176, n. 3.

Le Grand Danois. Buff. Sonn. xxiii. p. 202, pl. 9?

Irish Greyhound. Shaw's Gen. Zool. i. p. 282. tab. 77.---Linn. Tran. iii. p. 16.---Kerr, p. 134.---Turton, i. p. 42, n. 22.---Smellie's Buffon, iv. p. 19, tab. 24.---Penn. Quadr. i. p. 241.

VAR. 9. *The Common Greyhound*. Size of a wolf, body curved, snout slender. *Canis familiaris grajus*. Linn.

Canis magnitudine lupi, trunco curvato, rostro attenuato.---*Canis (familiaris) grajus*. Linn. Syst. Nat. Gmel. gen. 12, sp. 1, var. $\alpha\alpha$. i. p. 68.

Canis Leporarius, or GRE-HOUND. Penn. Brit. Zool. i. p. 63.

Canis venaticus graius seu græcus nonnullis Scoticus, a GREYHOUND. Raii. Syn. quadr. p. 176, n. 2.

Le Levrier. Buff. Sonn. xxiii. p. 202, tab. 10.

Common Greyhound. Shaw's Gen. Zool. i. p. 283.---Kerr, p. 134---Turton, i. p. 42, n. 24.---Daniel's Rural Sports, 8vo. edit. i. tab. pp. 437, 439, 460; excellent.---Smellie's Buffon, iv. p. 19. tab. 26.---Penn. Quadr. i. p. 241.

VAR. 10. *The Mastiff*. Of large size, body robust, lips pendulous at the sides. *Canis familiaris Anglicus*.---Linn.

Canis maximus labiis ad latera pendulis, corpore toroso.---*Canis (familiaris) Anglicus*. Linn. Syst. Nat. Gmel. gen. 12, sp. 1, var. o. i. p. 67.

Canis villaticus, or catenarius; THE MASTIFF, or BANDOg. Penn. Brit. Zool. i. p. 60.

Canis masticus, nonnullis mastinus, A MASTIFFE. Raii. Syn. Quadr. p. 176, n. 1.

Le Dogue de forte race. Buff. Sonn. xxiii. p. 225, tab. 23.

Mastiff. Shaw's Gen. Zool. i. p. 284.---Kerr, p. 133.---Turton, i. p. 41, n. 15.---Penn. Quadr. i. p. 242.---Smellie's Buffon, iv. tab. 44.---Bing. Anim. Biog. 3d edit. i. 223.

VAR. 11. *The Bull-dog*. Size of a wolf, body robust, lips pendulous at the sides. *Canis familiaris molossus*.---Linn.

In *size* somewhat smaller than the mastiff, but in form nearly allied to it. *Snout* somewhat flatter, and *general aspect* much more ferocious. W. B.

Canis magnitudine lupi, labiis ad latera pendulis, corpore toroso.---*Canis (familiaris) molossus.* Linn. Syst. Nat. Gmel. gen. 12, sp. 1, var. ξ . i. p. 67.

Le Dogue. Buff. Sonn. xxiii. p. 211, tab. 18, fig. 1.

Bull-dog. Shaw's Gen. Zool. i. p. 284---Kerr, p. 132.---Turton, i. p. 41, n. 14.---Penn. Quadr. i. p. 242.---Smellie's Buffon, iv. p. 21, tab. 42.---Bing. Anim. Biog. 3d edit. i. p. 242.

VAR. 12. *The Terrier.* *Canis familiaris terrarius.*

Canis terrarius, or TERRIER. Penn. Brit. Zool. i. p. 61.

Terrier. Shaw's Gen. Zool. i. p. 284.---Daniel's Rural Sports, 8vo. edit. i. tab. p. 122.---Bing. Anim. Biog. 3d edit. i. p. 226.

VAR. 13. *The Lurcher.* *Canis familiaris lanarius.*

Canis vertagus, or TUMBLER. Penn. Brit. Zool. i. p. 66.---Raii. Syn. Quadr. p. 177, n. 7.

Lurcher. Kerr, p. 135. Turton, i. p. 42.

VAR. 14. *The Turnspit.* Legs short, body long, and often variegated. *Canis familiaris vertagus.* Linn.

Legs usually crooked. *Colour* generally dusky grey, spotted with black, or entirely black, with the under parts whitish. W. B.

Canis pedibus brevibus, trunco longo sæpius variegato.---
Canis (familiaris) vertagus. Linn. Syst. Nat. Gmel. gen.
 12, sp. 1, var. ♀♀. i. p. 69.

Canis versator, or TURNSPIT. Penn. Brit. Zool. i.
 p. 70.

Le Basset. Buff. Sonn. xxiii. p. 209, tab. 15.

Turnspit. Shaw's Gen. Zool.---Kerr, p. 135.---Turton,
 i. p. 42, n. 32.---Smellie's Buffon, iv. p. 20, tab. 34, fig.
 1, 2.

10. THE COMMON FOX. Tail straight, tipped with white.
Canis vulpes. Linn.

Head broad at the back, and sharpened towards the muzzle.
 Ears erect, and sharp-pointed. Eyes hazel colour, very brilliant,
 and expressive; and situated obliquely in the head. Tail strait,
 bushy, and somewhat pointed.

General colour yellow brown: forehead, shoulders, hind part of
 the back, as far as the beginning of the tail, and outsides of the legs
 mixed with whitish or ash colour. Lips, cheeks, and throat white.
 A white stripe on the under side of each leg. Breast and belly whitish
 grey. Tips of ears and feet black. Tip of tail milk white. W. B.

Canis caudâ rectâ, apice albo.---*Canis vulpes.* Linn.
 Syst. Nat. Gmel. i. p. 73.---Erxleben, Syst. regn. animal,
 gen. 55, sp. 5, p. 561.

Canis vulpes. Fox. Turton, i. p. 45.---Kerr, p. 141.

Canis fulvus, pilis cinereis intermixtis. Brisson, regn.
 animal, p. 239.

Vulpes vulgaris. Klein, quadr. desp. p. 71.

Vulpes. Gesner, p. 966.---Ruysch, i. pa. 1. p. 92, tab.
 56.---Raii. Syn. quadr. p. 177.

Le Renard. Buff. Sonn. xxiv. p. 313, pl. 13.---Cuv.
 Tab. Element. p. 121.

Fox. Penn. Quadr. i. p. 251.---Penn. Brit. Zool. i. p. 71.---Shaw's Gen. Zool. i. p. 314.---Daniel's Rural Sports, 8vo. edit. i. p. 220, tab. pp. 101, 220.---Church's Cabinet of Quadrupeds, art. Fox.---Smellie's Buffon, iv. p. 214, tab. 66.---Bing. Anim. Biog. 3d edit. i. p. 253.

VAR. 1. *The Greyhound-fox.* Of large size.

VAR. 2. *The Mastiff-fox.* Smaller, but more strongly formed.

VAR. 3. *The Cur-fox.* The smallest of the three, tail tipped with black.

Is the latter of these the

Canis cauda recta, apice nigro?---*Canis aloper?* Linn. Syst. Gmel. i. p. 74? and Erxleben, Syst. regn. animal, gen. 56, sp. 6, p. 565?

THE CAT TRIBE. Front-teeth in each jaw six, the intermediate ones equal; grinders three on each side: tongue rough, with sharp prickles that point backward: claws retractile. *FELIS.* Linn. Syst. Nat. Gmel. gen. 13, i. p. 71.

Head round, and visage short. Toes five on the fore, and four on the hind feet; the claws hooked and sharp. The feet rest upon the toes only. The females have eight teats, four on the breast and four on the belly. W. B.

11. THE COMMON CAT. Tail long and annulated. *Felis catus.* Linn.

Felis cauda elongatâ annulatâ.---*Felis catus.* Linn. Syst. Nat. Gmel. i. p. 80.

1. *The wild Cat.* Tail with dusky rings, body marked with dusky stripes, of which three on the top of the back are disposed longitudinally, whilst those on the sides are transverse, and somewhat curved. *Felis catus ferus.* Linn.

Size about four times as large as that of the Common Cat. *Head* proportionally more thick: *face* flatter; and all the limbs much more strong. *Teeth* and *claws* of tremendous size.

Colour generally pale yellowish grey, with dusky stripes; those on the back extending lengthwise, and those on the sides being transverse and somewhat curved. In different parts of Europe, the colours of the Wild Cat somewhat vary; but all the animals are more or less striped, and in no instance have been seen spotted, like many of the domestic kinds.

Tail thick, not of great length, and marked throughout with dusky rings: the end always tipped with black. *Lips, tip of nose,* and *hinder part of lower joints of legs* black. *Fur* always soft and fine. W. B.

Not uncommon in the woods of Scotland and Ireland, and of some of the northern parts of England.

Felis caudâ elongatâ, fusco annulatâ, corpore fasciis nigricantibus, dorsalibus longitudinalibus tribus, lateralibus spiralibus.---*Felis (catus) ferus.* Linn. Syst. Nat. Gmel. gen. 13, sp. 6, var. α . i. p. 80.---Erxleben, Syst. regn. animal, gen. 44, sp. 12, p. 518.

Felis silvestris. Brisson, regn. animal, p. 265.

Catus silvestris ferus, vel feralis, eques arborum. Klein, quad. desp. p. 75.

Felis catus. Wild Cat. Turton, i. p. 49.---Kerr, p. 153.

Felis silvestris. Gesner. p. 325.---Ruysch, i. pa. 1. p. 127. tab. 72.

Le Chat sauvage. Buff. Sonn. xxiv. p. 18, pl. 2, fig. 1,

Wild

Wild Cat. Penn. Quadr. i. p. 295.---Penn. Brit. Zool. i. p. 80.---Smellie's Buffon, iv. p. 49, tab. 46.---Bing. Anim. Biog. 3d edit. i. p. 304.

Common Cat. Shaw's Gen. Zool. i. p. 363.

2. *The Domestic Cat.* Less than the wild cat, hair shorter and thicker. *Felis catus domesticus.* Linn.

The FEMALE domestic cats are very various in colour. Some are entirely black, others variegated with black and white, and others (from which they have the name of tortoise-shell cats,) with black, fulvous, and white. Some again are altogether white; others fulvous and tawny; others tabby, or like the wild cat, but with much more vivid variegations; and others dun colour or tawny, either plain or with deeper stripes. These variations in colour are, however, confined to the females, the MALES being nearly all marked with grey stripes. A tortoise-shell male cat is considered a great rarity in the species. W. B.

Felis catus minor, pilis brevioribus, et crassioribus.---*Felis (catus) domesticus.* Linn. Syst. Nat. Gmel. gen. 13, sp. 6, var. β . i. p. 80.---Erxleben, Syst. regn. animal, gen. 44, sp. 12, var. *b*. p. 520.

Felis domestica. Brisson, regn. animal, p. 191.---Klein, quad. desp. p. 75.---Gesner, p. 317.---Ruysch, i. pa. 1. p. 126, tab. 72.---Raii. Syn. quadr. p. 170.

Felis catus. Domestic cat. Turton, i. p. 49.---Kerr, p. 154.

Le Chat domestique. Buff. Sonn. xxiv. p. 5. pl. 1.

Domestic Cat. Penn. Brit. Zool. i. p. 82.---Smellie's Buffon, iv. p. 49, tab. 47.---Bing. Anim. Biog. 3d edit. i. p. 305.

Common Cat. Shaw's Gen. Zool. i. p. 163.

THE WEESEL TRIBE. Front-teeth in each jaw six, sharpish: canine-teeth longer: tongue in some smooth, in others rough, with prickles that point backwards: body of a lengthened form. *VIVERRA*. *Shaw's Gen. Zool.* i. p. 378.

Head small; and *muzzle* generally somewhat slender. Of the six *front-teeth* in each jaw two are placed interiorly, within the line of the rest. *Ears* short. *Legs* very short: *toes* five on each foot, both before and behind. The *feet* rest upon the toes only. W. B.

Obs. I have followed the example of Mr. Pennant and Dr. Shaw, in uniting under one tribe the two Linnean genera of *Mustela* and *Viverra*, and in rejecting, (with Erxleben and Shaw,) the Otters from the genus *Mustela*.

12. THE COMMON OR WHITE BREASTED MARTIN.
Body dusky, throat white. *Viverra foina*. *Shaw*.

Length, to the origin of the tail, about 18 inches; and of the *tail* about 10 inches. *Head* small: *muzzle* pointed, *eyes* prominent and lively. *Ears* broad, rounded, and open. *Legs*, and particularly the fore-legs, so short that the animal seems rather to creep than to walk. *Feet* broad, and covered, even on their toes, with a thick down. *Claws* white, large, and sharp.

Fur of blackish tawny colour on the upper parts; dusky brown on the belly, and white on the throat and breast. *Hair of the tail* very long, especially towards the end, where it is both thicker and more dark, than near the origin. W. B.

Not very uncommon in some of the southern parts of Great Britain and Ireland. It inhabits woods in the neighbourhood of villages and farm yards: in Wales it resides also amongst rocks.

Mustela pedibus fissis, corpore fulvo nigricante, gulâ albâ.---*Mustela foina*. *Linn. Syst. Nat.* Gmel. i. p. 95.---*Erxleben, Syst. regn. animal, gen.* 42, sp. 5, p. 458.

Mustela

Mustela foina. Common Martin. Turton, i. p. 59.---Kerr, p. 176.

Mustela foyna. Brisson, regn. animal, p. 246.

Martes saxorum non fagorum, seu domesticus. Klein, quadr. disp. p. 64.

Martes domestica. Gesner, p. 97.---Ruysch, i. pa. 1. p. 108.

Martes aliis foyna. Raii Syn. quadr. p. 200.

Viverra foina. Shaw's Gen. Zool. i. p. 409.

La Fouine. Buff. Sonn. xxiv. p. 356, tab. 16, fig. 3.---Cuv. Tab. Element. p. 115.

Martin. Penn. Quadr. ii. p. 41.---Penn. Brit. Zool. i. p. 92, tab. 6, n. 15.---Shaw's Gen. Zool. i. p. 409.---Smellie's Buffon, iv. p. 239, tab. 70.---Daniel's Rural Sports, 8vo. edit. i. p. 502, tab. opp.

13. THE PINE, OR YELLOW-BREADED MARTIN.
Viverra Martes. Body dusky, throat yellow. *Viverra martes*. Shaw.

Length, to the origin of the tail, about 18 inches; and of the tail 10 inches. In every respect, except its having a yellow throat, and its fur being somewhat darker, and more brilliant, the Pine Martin answers precisely the description given of the last species. W. B.

Rare. Found only in a few of the thickly wooded districts of Scotland, Wales, and the north of England.

Mustela pedibus fissis, corpore fulvo nigricante, gula flavo.---*Mustela Martes*. Linn. Syst. Nat. Gmel. i. p. 95.---Erxleben, Syst. regn. animal, gen. 42, sp. 4, p. 455.

Mustela martes. Pine Martin. Turton, i. p. 59.---Kerr, p. 177.

Mustela martes. Brisson, regn. animal, p. 247.---Klein, quadr. desp. p. 64.

Martes

Martes silvestris. Gesner, p. 99.---Ruysch, i. pa. 1, p. 108.

Martes abietum. Raii, Syn. quadr. p. 200.

Viverra Martes. Shaw's Gen. Zool. i. p. 410.

La Marte. Buff. Sonn. xxv. p. 99, tab. 1, fig. 1.---Cuv. Tab. Element, p. 115.

Pine Martin. Penn. Quadr. ii. p. 42.---Penn. Brit. Zool. i. p. 94.---Shaw's Gen. Zool. i. p. 410.---Bing. Anim. Biog. 3d edit. i. p. 332.

Pine Weasel, or yellow-breasted Martin. Smellie's Buffon, iv. p. 245, tab. 73.

14. THE POLECAT. *Viverra putorius*. Body blackish yellow, or chocolate; muzzle and ears white. *Viverra putorius*. Shaw.

Length, to the origin of the tail, 17 inches; and of the tail 6 inches. *Muzzle* sharpened. *Legs* short: *toes* long, each furnished with a tolerably sharp claw. *Tail* covered with longish hair, but not, (as in the two preceding species,) particularly bushy towards the end.

Ears short, rounded, and tipped with white. The space round the *muzzle* is also whitish; but darker in the female than the male, and has a yellowish tinge. *Head, throat, breast, legs, and thighs* of a deep chocolate colour, almost black. W. B.

Too common in most parts, both of Great Britain and Ireland.

Mustela pedibus fissis, corpore flavo nigricante, ore auriculisque albes.---*Mustela putorius*. Linn. Syst. Nat. Gmel. i. p. 76.

Mustela flavo-nigricans, auricularum que apicibus albis.---*Mustela putorius*. Erxleben, Syst. regn. animal, gen. 42, sp. 7, p. 463.

Mustela putorius. Polecat. Turton, i. p. 60.---Kerr, p. 179.

Mustela

Mustela putorius. Brisson, regn. animal, p. 249.

Mustela foetida. Klein, Quad. disp. p. 63.

Putorius. Gesner, p. 767.---Ruysch, i. pa. 1, p. 107.---Raii. Syn. quadr. p. 199.

Viverra putorius. Shaw's Gen. Zool. i. p. 415, tab. 98.

Le Putois. Buff. Sonn. xxv. p. 108, tab. 1, fig. 3.---Cuv. Tab. Element, p. 116.

Fitchet. Penn. Quadr. ii. p. 37.---Penn. Brit. Zool. i. p. 89, tab. 6, n. 14.

Polecat. Shaw's Gen. Zool. i. p. 415, tab. 98.---Smellie's Buffon, iv. p. 248, tab. 74.

15. THE COMMON WEESEL. Body tawny ; brown above, white beneath : tail similar in colour to the body. *Viverra vulgaris*. Shaw.

Length, to the origin of the tail, 7 inches ; and of the *tail* 2 inches. *Ears* larger, in proportion to the size of the animal, than those of most other Weesels. *Tail* somewhat pointed, and not bushy towards its extremity.

All the upper parts of the body, with the tail, legs, and feet, of a beautiful yellowish brown colour : whole under side, from the chin to the tail, white. On each side of the head, a little below the corner of the mouth, there is a spot of brown. *Ears* whitish on the edges. At the posterior angle of each eye there is a white spot. Tips of the *feet* and the *claws* white : the latter have each a red line extending along them. W. B.

Common in all parts of Great Britain and Ireland.

Mustela pedibus fissis, corpore ex fusco-rufo, subtus albo caudâ concolore.---*Mustela vulgaris*. Linn. Syst. Nat. Gmel. i. p. 99.---Erxleben, Syst. regn. animal, gen. 42, sp. 12, p. 471.

Mustela vulgaris. Common Weesel. Turton, i. p. 61.---Kerr, p. 182.

Mustela

Mustela vulgaris. Brisson, regn. animal, p. 242.---Klein, quadr. disp. p. 62.---Raii. Syn. quadr. p. 195.

Viverrá vulgaris. Shaw's Gen. Zool. i. p. 420, tab. 98.

La Belette. Buff. Sonn. xxv. p. 125, tab. 3, fig. 1.---Cub. Tab. Element, p. 116.

Common Weesel. Penn. quadr. ii. p. 33.---Penn. Brit. Zool. i. p. 95, tab. 7; bad figure.---Shaw's Gen. Zool. i. p. 420, tab. 98.---Smellie's Buffon, iv. p. 257, tab. 77.---Bing. Anim. Biog. 3d edit. i. p. 337.

16. THE STOAT, or ERMINE. Tail black at the tip.
Viverra erminea. Shaw.

Length, to the origin of the tail, about 10 inches; and of the *tail* 5 inches. *Muzzle* short, and rounded. *Ears* large, and round; the opening very wide, and the lowest part of the opening nearly in a line with the angle of the mouth. *Eyes* large, of a dark colour, and equi-distant from the ears and extremity of the nose. *Whiskers* very long. *Toes* long, and furnished with sharp claws.

Upper parts of the body, and outsides of the legs brown; darker on the muzzle and top of the head than elsewhere. *Under parts*, from the muzzle to the base of the tail, white in the male, and yellowish in the female. Edges of the *ears*, extremities of the *toes*, and *claws* white. Longest hairs of *whiskers* whitish, the rest brown.

In the northern parts of Scotland entirely white in winter, except the tip of the tail. W. B.

Common.

Mustela pedibus fissis, caudæ apice atro.---*Mustela erminea*. Linn. Syst. Nat. Gmel. i. p. 98.

Mustela auricularum marginibus albis, caudæ apice nigro.---*Mustela erminea*. Erxleben, Syst. regn. animal, gen. 42, sp. 13, p. 474.

Mustela erminea. Stoat or Ermine. Turton, i. p. 61.---Kerr, p. 181.

Mustela

Mustela hieme alba, æstate supra rutila infra alba; caudæ apice nigro.---Brisson, regn. animal, p. 243.

Mustela armellina. Klein, quad. desp. p. 63.

Mustela alba. Gesner, p. 753.

Mustela candida, s. animal ermineum. Raii. Syn. quadr. p. 198.

Viverra erminea. Shaw's Gen. Zool. i. p. 426, tab. 99.

Hermine ou Roselet. Buff. Sonn. xxv. p. 153, tab. 3, fig. 2, tab. 4, fig. 2.

Stoat or Ermine. Penn. Quadr. ii. p. 35.---Penn. Brit. Zool. i. p. 89, tab. 7, n. 18.---Shaw's Gen. Zool. i. p. 426, tab. 99.---Smellie's Buffon, iv. p. 262, tab. 77, 79.

THE OTTER TRIBE. Front teeth in each jaw six, sharpish: canine-teeth larger: feet webbed. **LUTRA.** Shaw's Gen. Zool. i. p. 378, 437.

Head short, and *muzzle* broad. *Front-teeth* of the lower jaw not in an even line, but two of them situated somewhat within the rest: *tongue* smooth. *Ears* very short. *Toes* five on each foot, both before and behind. The *feet* rest upon the toes only. W. B.

17. THE COMMON OTTER. Body brown, feet naked, tail half the length of the body. *Lutra vulgaris.* Shaw.

Length, to the origin of the tail, about 2 feet; and of the *tail* 16 inches. *Weight* of the male usually from 18 to 26lb. and of the female from 13 to 22lb. An otter snared in October 1794, in the river Lea, betwixt Ware and Hertford, weighed upwards of forty pounds. *Head* short and oval. *Muzzle* broad. *Neck* very short, and nearly equal in thickness to the head. *Eyes* small and brilliant, and situated towards the front of the face. *Ears* rounded and very short: the orifices straight. *Mouth* small. *Legs* short, but remarkably strong, broad,

broad and muscular; and the joints so loosely articulated, that the animal is able, at pleasure, to turn them quite back, and to bring them into a line with the body, so as to make them perform the office of fins. *Toes* likewise exceedingly strong, and connected together by narrow but stout webs. All the toes on the same foot are nearly of equal length, and the spaces betwixt them are also equal. The extremities of the toes above, and the whole under parts of the feet, are naked. The otter has no heel; but under the sole of the foot there is a round ball, by which, and the impression of the claws, its track in the mud is easy to be distinguished. *Tail* very thick, particularly towards its origin.

Colour of body deep brown, except a small white patch on each side of the nose, and another under the chin. W. B.

Not uncommon in Great Britain or Ireland, particularly in districts which border upon the sea.

Mustela plantis palmatis nudis caudâ corpore dimidio brevior.---*Mustela lutra.* Linn. Syst. Nat. Gmel, i. p. 93.

Lutra plantis nudis, cauda corpore dimidio, brevior.---*Lutra vulgaris.* Erxleben, Syst. regn. animal, gen. 41, sp. 2, p. 448.---Shaw's Gen. Zool. i. p. 437.

Mustela lutra. Otter. Turton, i. p. 57.

Mustela lutra piscatoria. Common Otter, Kerr, p. 172.

Lutra castanei coloris. Brisson, regn. animal, p. 277.

Lutra. Klein, quad. disp. p. 91.---Gesner, p. 684.---Ruysch, i. pa. 1, p. 104.---Raii. Syn. quadr. p. 187.

La Loutre. Buff. Sonn. xxiv. p. 346, tab. 16, fig. 1, 2.

La Loutre ordinaire. Cuv. Tab. Element, p. 115.

Common Otter. Shaw's Gen. Zool. i. p. 437, tab. 100.---Smellie's Buffon, iv. p. 232, tab. 68, fig. 1, 2.---Bing. Anim. Biog. 3d edit. i. p. 344.

Otter. Penn. Quadr. ii. p. 77.---Penn. Brit. Zool. i. p. 92, tab. 8, fig. 19.---Daniel's Rural Sports, 8vo. edit. i. p. 514, tab. opp.

THE BEAR TRIBE. Upper front teeth six, alternately hollowed within: lower front-teeth six, the two lateral ones longer than the rest, and lobed with smaller or secondary teeth at their internal bases: canine-teeth solitary: grinders five in the upper, and six in the lower jaw, the former approximating to the canine-teeth: tongue smooth: eyes furnished with winking membranes: snout prominent. *URSUS*. *Linn. Syst. Nat. Gmel. gen.* 16, i. p. 100.

Toes five on each foot, both before and behind. The whole *sole of the foot* applied to the ground in walking. W. B.

18. **THE BADGER.** Tail of the same colour as the body, which is grey above, and black below: a longitudinal black band through the ears and eyes. *Ursus meles*. *Linn.*

Length, to the origin of the tail, about $2\frac{1}{2}$ feet; and of the *tail* 6 inches. *Weight* from 15 to 25, and sometimes even 30lb. *Head* somewhat like that of a dog. *Eyes* small. *Ears* short and rounded. *Neck* short, and closely covered with hair. Whole *body* thick and clumsy, covered with long and coarse hairs that almost resemble bristles. *Legs* very strong, but so short that the belly seems to touch the ground. Each *foot* has five toes armed with *claws*, of which those on the fore feet are longer and more stout than those of the hinder ones. Immediately below the tail there is a narrow transverse *orifice*, which opens into a kind of pouch: from this is exuded a white substance, of very fetid smell.

Nose, *chin*, lower sides of the *cheeks*, and middle of the *forehead* white. Along each side of the head runs a black, pyramidal mark, which includes the ears and eyes. Each of the long *hairs* of the body is of three colours: dirty yellowish white at the bottom, black in the middle, and cinereous or grey at the ends. The hair that covers the tail is very long, and of the same colour as that of the body. The *throat*, and all the *under parts*, as well as the legs and feet, are black. W. B.

c. Occasionally

Occasionally found in most of the wild and uninclosed parts of Great Britain and Ireland.

Ursus cauda concolore, corpore supra cinereo, subtus nigro, fasciâ longitudinali per oculos auresque nigrâ.---
Ursus meles. Linn. Syst. Nat. Gmel. i. p. 102.---Erxleben, Syst. regn. animal, gen. 17, sp. 3, p. 161.

Ursus meles. Common Badger. Turton, i. p. 63.---Kerr, p. 186.

Coati caudâ brevi. *Taxus, meles.* *Coati griseus.* Klein, quad. desp. p. 73.

Meles. Brisson, regn. animal, p. 253.---Gesner, p. 86.

Taxus Sive Meles Raii. Syn. quadr. p. 185.---Ruysch, i. pa. 1, p. 101.

Le Blaireu. Buff. Sonn. xxiv. p. 334, tab. 14, 15.

Le Blaireu proprement dit. Cuv. Tab. Element, p. 112.

Common Badger. Penn. Quadr. ii. p. 14.---Penn. Brit. Zool. i. p. 85, tab. 8.

Badger. Shaw's Gen. Zool. i. p. 467, tab. 106.---Daniel's Rural Sports, 8vo. edit. i. p. 508, tab. opp. p. 514.---Smellie's Buffon, iv. p. 226, tab. 67.---Bing. Anim. Biog. 3d edit. i. p. 388.

THE MOLE TRIBE. Front-teeth unequal, six in the upper, and eight in the lower jaw: canine-teeth solitary, the upper ones largest: grinders seven above, six below.
TALPA. Linn.

No external ears. Snout long, and slender towards the end. Fore-feet much broader than the hind ones, their under sides turned outwards. Toes with broad and short nails. Tail very short. W.B.

19. THE COMMON MOLE. Tail short : five toes on each foot. *Talpa Europæa*. Linn.

Length about five inches and three quarters, exclusive of the *tail*, which is about an inch long. *Head* large, and terminating in a slender, strong, and cartilaginous snout. *Neck* so thick and short that the head seems externally to be joined immediately to the shoulders. *Eyes* so minute as scarcely to be perceptible. No *external ears*. *Fore-feet* short, but excessively strong and broad : they are situated outwards, and furnished with large *claws*. *Hind-feet* much smaller. Fore part of the *body* very thick and muscular. *Skin* so tough as not easily to be cut, except by a very sharp knife. *Fur* short, close set, and softer than the finest velvet.

Colour generally glossy black. W. B.

Talpa caudâ brevi, pedibus pentadactylis.---*Talpa Europæa*. Linn. Syst. Nat. Gmel. i. p. 110.---Erxleben, Syst. regn. animal, gen. 13, sp. 1, p. 114.

Talpa Europæa. *European Mole*. Turton, i. p. 69.---Kerr, p. 200.

Talpa vulgaris. Brisson, regn. animal, p. 280.

Talpa nostras, nigra communiter. Klein. Quadr. disp. p. 60.

Talpa. Gesner, p. 951.---Ruysch, i. pa. 1, p. 118.---Raii. Syn. Quadr. p. 236.

La Taupe. Buff. Sonn. xxv. p. 258, tab. 11, fig. 1, 2.

La Taupe ordinaire. Cuv. Tab. Element, p. 110.

Common Mole. Shaw's Gen. Zool. i. p. 515, tab. 117.---Bing. Anim. Biog. 3d edit. i. p. 399.

European Mole. Penn. Quadr. i. p. 229.---Penn. Brit. Zool. i. p. 128.

Mole. Smellie's Buffon, iv. p. 309, tab. 87.

THE SHREW TRIBE. Upper front-teeth two; long, and cleft at the extremities: lower front-teeth two or four, the intermediate ones the shortest: canine-teeth on each side in both jaws two or more: grinders knobbed. *Sorex*. Linn. *Syst. Nat. Gmel. gen.* 19, i. p. 112.

Upper *front-teeth* extend forward. *Nose* long and slender. *Ears* small. The whole *sole of the feet* applied to the ground in walking. W. B.

20. **THE FETID SHREW.** Tail of middle length, under parts of the body dirty white. *Sorex araneus*. Linn.

Smaller than the common mouse. *Length*, from the nose to the origin of the tail, about $2\frac{1}{2}$ inches; and of the *tail* $1\frac{1}{2}$ inch. *Weight* three drams. *Snout* long and slender. *Eyes* very small, and almost concealed in the fur. *Ears* short and rounded. In each jaw two slender *front-teeth*, pointing forward, and somewhat bifid at their extremities. The rest of the teeth are so closely united as to appear on each side like a serrated bone. *Legs* short; and the under ones very far back. The female has six teats.

Colour ferruginous or dusky red above, and white beneath. *Tail* clad with shortish dusky hairs. W. B.

Usually found at the bottoms of hedges. Common.

Sorex caudā mediocri, corpore subtus albido.---*Sorex araneus*. Linn. *Syst. Nat. Gmel. i.* p. 114.---Erxleben, *regn. anim. gen.* 14, sp. 17, p. 125.

Sorex araneus. *Fetid Shrew*. Turton, i. p. 71.---Kerr, p. 205.

Mus venenosus. Klein, *quad. disp.* p. 58.

Mus araneus. Brisson, *regn. animal*, p. 178.---Gesner, p. 239.---Ruysch, i. pa. i. p. 116.---Raii. *Syn. Quadr.* p. 239.

La Musaraigne. Buff. Sonn. xxv. p. 246, tab. 10, fig. 1.

La Musaraigne ordinaire, ou Musette. Cuv. Tab. Element, p. 109.

Fetid Shrew. Penn. Quadr. i. p. 224.---Penn. Brit. Zool. i. p. 125.

Common Shrew. Shaw's Gen. Zool. i. p. 527, tab. 118.

Shrew Mouse. Smellie's Buffon, iv. p. 303, tab. 86, fig. 1.

21. THE WATER SHREW. Tail of middle length: body blackish above, cinereous below: toes fringed. *Sorex fodiens.* Linn.

Length, to the origin of the tail, about $3\frac{1}{2}$ inches; and of the *tail* 2 inches. *Muzzle* broader at the extremity than in the last species: it is somewhat flat both above and below. *Ears* minute, their place being chiefly marked by a small tuft of white hairs, proceeding from their upper edge. *Eyes* situated near the corners of the mouth, and so small as to be almost hidden by the fur. The female has ten *teats*.

Colour of the upper parts glossy black: throat, breast, and belly cinereous. Hairs of the *whiskers* black at the base, and cinereous at their extremities. *Legs* and *feet* whitish. *Teeth* orange-coloured or red at their extremities. W. B.

Found about the banks of ditches and streams. Uncommon.

Sorex cauda mediocri subnudâ, corpore nigricante subtus cinereo, digitis ciliatis.---*Sorex fodiens.* Linn. Syst. Nat. Gmel. i. p. 113.---*Sorex Daubentonii.* Erxleben, Syst. regn. animal, gen. 14, sp. 5, p. 124.

Sorex fodiens. Water Shrew. Kerr, p. 204.

Sorex bicolor. Water Shrew. Shaw's Naturalist's Miscellany, tab. 55.---Turton, i. p. 71.

La Musaraigne d'eau. Buff. Sonn. xxv. p. 252, tab. 10, fig. 2.---Cuv. Tab. Element, p. 109.

Water Shrew. Penn. Quadr. i. p. 225.---Penn. Brit. Zool. i. p. 126, tab. 11, n. 23.---Shaw's Gen. Zool. i. p. 424, tab. 118.

Water Shrew, or blind Mouse. Smellie's Buffon, iv. p. 308, tab. 86, fig. 2.

22. THE FRINGE-TAILED WATER SHREW. Tail of middle length; body blackish brown, above and below; toes and tail with a white fringe underneath. *Sorex Ciliatus.* Sowerby's *British Miscellany*, i. p. 103, tab. 49.

Length, to the origin of the tail, $4\frac{1}{4}$ inches; and of the *tail* $2\frac{1}{4}$ inches. In *size* somewhat larger than either of the preceding species. *Ears* tipped with white hairs. *Eyes* small. *Tail* of middle length, fringed with white underneath, and tipped with white. *Legs* and *toes* fringed also underneath with white.

Colour of the upper parts blackish brown, mixed with cinereous hairs; of the throat, breast, and belly, nearly the same. *W. B. from Mr. Sowerby's specimen.*

A single specimen discovered in a ditch near Norwich.

THE URCHIN TRIBE. Upper front-teeth two, distant: lower front-teeth two, approximated: canine-teeth five on each side above, and four below: grinders four on each side, both above and below: upper parts of the body covered with spines. ERINACEUS. *Linn. Syst. Nat. Gmel. gen.* 20, i. p. 115.

The whole of the *sole of the feet* is applied to the ground in walking. *Tail* short. W. B.

23. THE HEDGEHOG. Ears rounded, nostrils crested. *Erinaceus Europæus.* *Linn.*

Length, to the origin of the tail, about 10 inches: *tail* seldom more than an inch long. *Muzzle* somewhat lengthened and slender, terminating

minating in a black and rounded cartilage, not much unlike the snout of a hog. *Upper lip* divided. *Nostrils* bordered on each side with a loose flap of skin. *Ears* erect, broad, short, and hairy. *Eyes* small, of a black colour, and situated high in the head. *Legs* short, and almost naked. Five *toes* on each foot, the inner toe shorter than the others. *Claws* long, but weak. All the upper parts of the body closely covered with strong and sharp *spines*, each about an inch in length: interspersed amongst these are stiff hairs or bristles. *Tail* generally so concealed amongst the spines as to be scarcely visible.

Hair of a yellowish ash-colour, mixed with white. *Spines* whitish at each end, with a black bar in the middle. W. B.

Not uncommon in thickets, hedges, &c.

Erinaceus auriculis rotundatis, naribus cristatis.---
Erinaceus Europæus. Linn. Syst. Nat. Gmel. i. p. 115.---Erxleben, Syst. regn. animal, gen. 18, sp. i. p. 169.

Erinaceus auriculis erectis.---*Erinaceus.* Brisson, regn. animal, p. 181.

Erinaceus Europæus. Common Urchin. Hedgehog. Turton, i. p. 27 ---Kerr, p. 209.

Acanthion vulgaris nostras, herinaceus, echinus.---Klein, quad. desp. p. 66.

Echinus terrestris. Gesner, p. 368.---Ruysch, i. pa. 1, p. 110.

Echinus seu erinaceus terrestris. Raii. Syn. quadr. p. 231.

Le Hérisson. Buff. Sonn. xxv. p. 232, tab. 9, fig. 1, 2.

Le Hérisson ordinaire. Cuv. tab. element, p. 109.

Common Hedgehog. Shaw's Gen. Zool. i. p. 542, tab. 121.---Smellie's Buffon, iv. p. 300, tab. 85, fig. 1, 2.---Bing. Anim. Biog. 3d edit. i. p. 408.

Common Urchin. Penn. quadr. i. p. 234.---Penn. Brit. Zool. i. p. 133.

* *With Nails or Claws.*

3. Two front-teeth in each jaw, and no canine-teeth.

ORDER IV. GLIRES.

Front-teeth two in each jaw, standing close together, but at a distance from the grinders. No canine-teeth in either jaw.

THE RAT TRIBE. Upper front-teeth wedge-shaped: grinders generally three, but sometimes only two on each side of both jaws: collar bones perfect. *Mus. Linn. Syst. Nat. Gmel. gen. 24, i. p. 125.*

Front-teeth long. *Tail* scaly or annulated; naked or thinly clad with hair. Five *toes* on each of the hind-feet. W. B.

24. THE NORWAY OR BROWN RAT. Tail very long and scaly, hairs stiff, grey on the upper parts of the body, whitish beneath. *Mus decumanus. Linn.*

Length, to the origin of the tail, 9 inches; and of the tail 8 inches. The tail consists of about two hundred rings. *Weight* from eight ounces to a pound. *Ears* dark-coloured and nearly naked. *Eyes* large, black, and prominent. All the upper parts of the body are of a tawny grey colour: the belly, insides of the thighs, neck, and end of muzzle whitish. *Legs* and feet almost naked, and of a dirty flesh-colour. *Fore-feet* have each four very distinct *toes*, and a claw in place

place of the fifth. Tail covered with minute dusky scales, disposed round it in circular bands, and mixed with a few scattered hairs. The female has twelve *teats*, of which six are situated on the breast, and six on the belly. W. B.

Common every where about buildings.

Mus caudâ longissimâ squamatâ, corpore setoso, griseo, subtus albedo.---*Mus decumanus*. Linn. Syst. Nat. Gmel. i. p. 127.

Mus caudâ elongatâ, palmis tetradactylis unguiculo pollicari, corpore rufo.---*Mus Norvegicus*. Erxleben, Syst. regn. animal, gen. 37, sp. 1, p. 381.

Mus Silvestris. Brisson, regn. animal, p. 170.

Mus decumanus. Norway Rat. Brown Rat. Turton, i. p. 80.---Kerr, p. 128.

Mus Norvegicus. Klein. quadr. desp. p. 56.

Le Surmulot. Buff. Sonn. xxvi. p. 27, tab. 3, fig. 1.---Cuv. tab. element, p. 139.

Norway Rat. Shaw's Gen. Zool. ii. p. 51, tab. 130, fig 2.---Penn. Brit. Zool. i. p. 115, n. 26.

Brown Rat. Penn. quadr. ii. p. 178.---Smellie's Buffon, iv. p. 275, tab. 71, fig. 1.---Bing. Anim. Biog. 3d edit. i. p. 437.

25. THE BLACK RAT. Tail very long and scaly, body blackish above, cinereous below. *Mus rattus*. Linn.

This species is considerably smaller than the last. Length, to the origin of the tail about 7 inches; and of the tail 8 inches. Weight from six to ten ounces. Head somewhat elongated; and nose sharper than that of the last species. Eyes rather large. Ears broad and naked. Fore-feet have each a claw in place of a thumb or interior toe. Tail very small and slender, almost naked of hair, and covered with annular scales.

Colour of the upper parts deep iron grey, bordering on black.

Belly

Belly cinereous. *Legs* dusky, and very slightly covered with hair. W. B.

By no means so common as the last species.

Mus caudâ longissimâ squamosa, corpore atro subtus canescente.---*Mus rattus*. Linn. Syst. Nat. Gmel. i. p. 127.

Mus caudâ elongatâ, palmis tetradactylis cum unguiculo pollicari, corpore griseo ---*Mus rattus*. Erxleben, Syst. regn. animal, gen. 37, sp. 2, p. 382.

Mus rattus. Black Rat. Turton, i. p. 80.---Kerr, p. 228.

Rattus. Brisson, regn. animal, p. 168.

Mus rattus domesticus. Klein, quad. desp. p. 57.

Mus domesticus major, sive rattus. Raii. Syn. quad. p. 217.---Gesner, p. 731.

Le Rat. Buff. Sonn. xxv. p. 184, tab. 6, fig. 1.

Le Rat ordinaire. Cuv. Tab. Element, p. 138.

Black Rat. Penn. Quad. ii. p. 176.---Penn. Brit. Zool. i. p. 113.---Shaw's Gen. Zool. ii. p. 52, tab. 130, fig. 1.

Rat. Smellie's Buffon, iv. p. 275, tab. 71, fig. 1.

26. THE WATER RAT. Tail (hairy) about half the length of the body; ears scarcely projecting above the fur; fore-feet each with three toes, and the rudiment of a fourth. *Mus amphibius*. Linn.

Length, to the origin of the tail, 7 inches; and of the *tail* about $3\frac{1}{2}$ inches. *Weight* 9 ounces. *Body* thicker in proportion than either of the preceding species: *head* shorter; and *nose* more blunt. *Eyes* small and black. *Ears* wide, short, rounded, almost hidden in the fur, and hairy on the insides near the edge. *Teeth* large, strong, and yellow. *Tail* covered with short, scattered hairs. *Fur* of the body thick

thick and less sleek than that of the preceding rats. None of the *feet* are webbed. There is a *claw* on each of the fore-feet, in place of a thumb or inner toe. All the claws are sharp. The female has eight *teats*, four on the breast and four on the belly.

Upper parts of the body blackish, or dark brown, mixed with reddish hairs: under parts dirty white, or cinereous. Tail tipped with a few white hairs. W. B.

Common about the banks of ditches, ponds, and streams.

Mus caudâ longitudine dimidiâ corporis, auribus vix vellere prominulis, pedibus subtetradactylis.---*Mus amphibius*. Linn. Syst. Nat. Gmel. i. p. 132.

Mus caudâ mediocri, palmis tetradactylis cum unguiculo pollicari, corpore nigricante.---*Mus amphibius*. Erxleben, Syst. regn. animal, gen. 37, sp. 3, p. 385.

Mus amphibius. Water Rat. Turton, i. p. 83.---Kerr, p. 235.

Mus aquaticus. Brisson, regn. animal, p. 175.---Gesner, p. 732.

Mus rattus aquatilis. Klein, quad. disp. p. 57.

Le Rat d'eau. Buff. Sonn. xxv. p. 214, tab. 7, fig. 2.---Cuv. Tab. Element, p. 138.

Water Rat. Penn. Quadr. ii. p. 182.---Penn. Brit. Zool. i. p. 218.---Shaw's Gen. Zool. ii. p. 73, tab. 129, fig. 1.---Smellie's Buffon, iv. p. 290, tab. 82, fig. 2.

27. THE COMMON MOUSE. Tail long and nearly naked, fore-feet with four toes, thumb without claw. *Mus musculus*. Linn.

Length of the body $3\frac{1}{2}$ inches; and of the tail nearly the same.

This little animal is so common, and so well known, as to need no particular description.

Mus caudâ elongatâ subnudâ, palmis tetradactylis, plantis pentadactylis, pollice mutico.---*Mus musculus*. Linn. Syst. Nat. Gmel. i. p. 128.

Mus caudâ elongatâ, palmis tetradactylis absque ungiculo pollicari, corpore griseo.---*Mus musculus*. Erxleben, Syst. regn. animal, gen. 37, sp. 5, p. 391.

Mus musculus. Common Mouse. Turton, i. p. 80.---Kerr, p. 229.

Mus minor, musculus vulgaris domesticus, caudâ tereti longâ. Klein. quadr. disp. p. 57.

Mus domesticus vulgaris, seu minor. THE MOUSE. Raii. Syn. quadr. p. 218.

Mus. Gesner, p. 714.---Ruysch, i. pa. 1, p. 115.

La Souris. Buff. Sonn. xxv. p. 199, tab. 6, fig. 3.---Cuv. Tab. Element, p. 139.

Common Mouse. Penn. Quadr. ii. p. 184.---Penn. Brit. Zool. i. p. 122, tab. 11, n. 30.---Shaw's Gen. Zool. ii. p. 56, tab. 131, fig. 2, 3.

Mouse. Smellie's Buffon, iv. p. 282, tab. 81, fig. 2.

28. THE LONG-TAILED FIELD MOUSE. Tail long and scaly; body greyish brown above, whitish below; the colours abruptly separated on the sides. *Mus sylvaticus*. Linn.

Length, to the origin of the tail, from $3\frac{1}{2}$ to $4\frac{1}{2}$ inches; and of the tail from 3 to 4 inches. Head thicker, and somewhat more clumsy, than that of the common mouse: eyes larger and more prominent: ears also more large, and nearly naked. Whiskers long. Tail slightly covered with hair. The females have six teats, two on the breast, and four on the belly. These are so minute as not to be visible except about the time of parturition.

Colour of the upper parts of the body greyish brown; and of the under parts whitish. On the breast there is an oblong, rufous, or ochrey mark. Hair on the toes, and beneath the tail, silvery. Claws white. Teeth yellowish. W. B.

Common

Common in dry, elevated grounds, particularly such as are woody, or covered with thickets.

Mus caudâ longâ squamosâ, corpore griseo lutescente subtus lateribusque abrupte albo.---*Mus sylvaticus.* Linn. Syst. Nat. Gmel. i. p. 129.

Mus caudâ mediocri, corpore cano pilis nigris, pectore flavescente, abdomine albido.---*Mus sylvaticus.* Erxleben, Syst. regn. animal, gen. 37, sp. 4, p. 388.

Mus sylvaticus. Field Mouse. Turton, i. p. 80.---Kerr, p. 230.

Mus caudâ longâ supra flavescens, infra ex albo cinerascens. Brisson, regn. animal, p. 174.

Mus domesticus medius. Raii. Syn. quadr. p. 218.

Le Mulot. Buff. Sonn. xxv. p. 204, tab. 7, fig. 1.---Cuv. Tab. Element, p. 139.

Field Mouse. Penn. Quadr. ii. p. 184.---Penn. Brit. Zool. i. p. 120.---Bing. Anim. Biog. 3d edit. i. p. 441.

Wood Mouse. Shaw's Gen. Zool. ii. p. 58, tab. 132.

Long-tailed Field Mouse. Smellie's Buffon, iv. p. 285, tab. 82, fig. 1.

29. THE HARVEST MOUSE. Tail long, and slightly hairy; ears somewhat longer than the fur of the head; body ferruginous brown above, white below. *Mus messorius.* Shaw.

Length, to the origin of the tail, seldom more than $2\frac{1}{2}$ inches; and of the tail about 2 inches. *Weight* about the sixth part of an ounce. Much smaller and more slender than the Field Mouse, to which it has a considerable alliance both in colour and appearance; ears by no means so large in proportion as those of that animal; and eyes less prominent.

The colour of the head and upper parts of the body is likewise a much fuller red, being nearly the same as that of the Squirrel or Dormouse.

mouse. Belly white; and the division of the colours of the upper and under parts so abrupt, as to appear almost like a line. W. B.

In corn-fields, corn-ricks, and barns, in Hampshire, Sussex, Wiltshire, and Dorsetshire.

Mus sylvaticus, var. β . *Harvest Rat*. Linn. Syst. Nat. Gmel. i. p. 129.

Mus supra ferrugineus, *subtus albus*, *caudâ longâ subpilosâ*, *auriculis cellere longioribus*.---*Mus messorius*. Shaw's Gen. Zool. ii. p. 62.

Mus messorius. *Harvest Mouse*. Turton, i. p. 81.---Kerr, p. 230.

Harvest Mouse. Penn. Quadr. ii. p. 185.---Penn. Brit. Zool. i. p. 121.---Shaw's Gen. Zool. ii. p. 62, frontisp.---Bing. Anim. Biog. 3d edit. i. p. 443.

Harvest Rat. First and second editions of Pennant's Quadrupeds.

30. THE MEADOW MOUSE. Tail short and somewhat hairy, ears projecting above the fur, fore-feet each with three claws, thumb without a claw, body dusky. *Mus arvalis*. Linn.

This animal differs very much in size in different countries. In England it is generally known to measure, from the nose to the origin of the tail, about 6 inches; whilst in France, M. Daubenton speaks of it as measuring only three inches. Tail seldom more than an inch and a half in length. Head large, and thick; and muzzle broad and blunt. Eyes dark and prominent. Ears wide, but scarcely longer than the fur. Legs, and particularly the fore-legs, very short, and slender. Tail thin, covered with short hair, and generally terminating in a little tuft. The female has six teats, of which four are situated on the belly, and two on the breast.

Fur, on the upper parts, very close and compact, and of a dusky ferruginous colour: that of the under parts cinereous. Teeth orange-coloured.

Common about corn-fields and hedges. W. B.

Mus

Mus caudā unciali, auriculis vellere prominulis, palmis subtetradactylis, corpore fusco.---*Mus arvalis.* Linn. Syst. Nat. Gmel. i. p. 134.

Mus caudā mediocri, auriculis vellere brevioribus, corpore supra ferrugineo, subtus cinereo.---*Mus terrestris.* Erxleben, Syst. regn. animal, gen. 37, sp. 7, p. 395.

Mus arvalis. Meadow Mouse. Turton, i. p. 84.---Kerr, p. 238.

Mus campestris minor. Brisson, regn. animal, p. 176.

Mus capite grandi. Klein, quad. desp. p. 57.

Mus agrestis minor. Gesner, p. 733.

Mus agrestis capite grandi, brachyuros. Raii. Syn. quad. p. 218.

Le Campagnol. Buff. Sonn. xxv. p. 222, tab. 8, fig. 2.---Cuv. Tab. Element, p. 137.

Meadow Mouse. Penn. Quad. ii. p. 205.---Shaw's Gen. Zool. ii. p. 81, tab. 136.

Short-tailed Field-Mouse. Penn. Brit. Zool. i. p. 123.---Smellie's Buffon, iv. p. 293, tab. 83.

THE SQUIRREL TRIBE. Front-teeth in each jaw two, the upper ones wedge-shaped, the lower sharp: grinders five on each side above, and four below: collar bones perfect: hairs of the tail spreading towards each side: whiskers long. *SCIURUS.* Linn. Syst. Nat. Gmel. gen. 25, i. p. 145.

Toes long, four on the fore, and five on the hind-feet. Claws strong and sharp. W. B.

31. THE COMMON SQUIRREL. Ears ending in tufts, or pencils of hair; tail of same colour as the back. *Sciurus vulgaris.* Linn.

Length,

Length, to the origin of the tail, about 9 inches; and of the tail about 8 inches. *Weight* about three quarters of a pound. *Head* short and thick. *Ears* terminating in long tufts or pencils of hair. *Eyes* large, black, and lively. *Front-teeth* of deep orange-colour, very sharp and strong. *Legs* and thighs, but particularly the hinder ones, exceedingly stout and muscular. *Toes* very long, and divided to their origin: those of the hind-feet, when expanded, will extend nearly two inches. *Claws* strong, somewhat hooked, and extremely sharp. On the fore-feet only four toes; but in place of the fifth, or inner toe, there is a very short thumb, having a horny lump upon it, the rudiment of a nail.

Colour of the upper parts, of the tail, and the outsides of the legs, reddish brown: neck, breast, and belly white. W. B.

Common in woods

Sciurus auriculis apice barbatis, caudâ dorso concolori.---
Sciurus vulgaris. Linn. Syst. Nat. Gmel. i. p. 145.---
 Erxleben, Syst. regn. animal, gen. 39, sp. 1, p. 411.

Sciurus vulgaris. Common Squirrel. Turton, i. p. 90.---Kerr, p. 255.

Sciurus vulgaris. Brisson, regn. animal, p. 150.---Raii. Syn. quadr. p. 214.

Sciurus vulgaris rubicundus. Klein, quad, disp. p. 53.

Sciurus. Gesner, p. 845.---Ruysch, i. pa. 1, p. 113, tab. 116.

L'écureuil. Buff. Sonn. xxv. p. 165, tab. 3, fig. 3.

L'écureuil commun. Cuv. Tab. Element, p. 135.

Common Squirrel. Penn. Quadr. ii. p. 138.---Penn. Brit. Zool. i. p. 107.---Shaw's Gen. Zool. ii. p. 134.---Bing Anim. Biog. i. p. 464.

Squirrel. Smellie's Buffon, iv. p. 268, tab. 80.

THE DORMOUSE TRIBE. Front-teeth in each jaw two, the upper ones wedge-shaped, the lower compressed at the sides: whiskers long: tail round, hairy, and thickest towards the end: fore and hind legs nearly of the same length,

length, the former with four and the latter with five toes.

Myoxus. Linn. Syst. Nat. Gmel. i. p. 155.

32. THE COMMON DORMOUSE. Body tawny red, with white throat: inner toes of the hind feet without claws.

Myoxus Muscardinus. Linn.

Size about that of the common mouse. *Eyes* large, black, and prominent. *Ears* broad, rounded, thin, and semi-transparent. *Fore-feet* with four toes, and hind-feet with five; the interior ones of the latter destitute of nails. *Tail* about $2\frac{1}{2}$ inches in length, and covered on every side with hair. In general appearance this animal is not much unlike the Field Mouse; but it is at first sight distinguishable by its hairy tail.

Head, back, sides, belly, and tail, of a tawny red colour. Throat white. W. B.

Not uncommon in thickets and woods, in the southern counties of England.

Myoxus rufus, gulâ albicante, plantarum pollicibus muticis.---*Myoxus Muscardinus*. Linn. Syst. Nat. Gmel. i. p. 156.

Mus caudâ elongatâ pilosâ, corpore rufo, gulâ albicante, pollicibus posticis muticis.---*Mus avellanarius*. Linn. Syst. Nat. edit. xii. vol. i. p. 83.

Sciurus corpore rufo gulâ albicante, pollicibus posticis muticis.---*Sciurus avellanarius*. Erxleben, Syst. regn. animal, gen. 39, sp. 16, p. 433.

Myoxus muscardinus. Common Dormouse. Turton, i. p. 97.---Kerr, p. 272.

Glis supra rufus, infra albicans. LE CROQUE NOIX. Brisson, regn. animal, p. 162.

Mus avellanarum minor. THE DORMOUSE OR SLEEPER. Raii. Syn. quad. p. 220.

Le Muscardin. Buff. Sonn. xxvi. p. 23, tab. 2, fig. 2.---Cuv. Tab. Element, 141.

Common Dormouse. Shaw's Gen. Zool. ii. p. 167, tab. 154.---Bing. Anim. Biog. 3d edit. i. p. 477.

Dormouse. Penn. Brit. Zool. i. p. 110.

Dormouse or Sleeper. Smellie's Buffon, iv. p. 336, tab. 95.

THE HARE TRIBE. Front-teeth in each jaw two, the upper ones double, having two small interior teeth standing behind the others. *LEPUS.* *Linn. Syst. Nat. Gmel. gen.* 22, i. p. 160.

Grinders appearing as if formed of vertical plates. *Toes* five on the fore, and four on the hind feet. *Tail* short and turned upward, or entirely wanting. W. B.

33. THE COMMON HARE. Tail short; ears tipped with black, and longer than the head. *Lepus timidus.* *Linn.*

Length about 2 feet. *Weight* from 7 to 10lb. *Head* oblong, somewhat egg-shaped. *Eyes* large, black, and prominent, situated outwards, and furnished with a *winking membrane*. *Ears* very large, and generally tipped with black. *Hind-legs* so long, that, measured from the uppermost joint to the toe, they are equal to half the length of the back, from the rump to the nose. *Feet* clad with hair, both above and below. *Tail* very short.

Colour of the upper parts a kind of brown, which approaches so nearly to the colour of dead leaves, that when the animal is in its usual haunts, about thickets or the bottoms of close hedges, it is generally concealed from sight. Each of the *hairs* is white at the root, black in the middle, and tawny red at the point. Throat, breast, and belly white. W. B.

Lepus caudâ abbreviatâ, auriculis apice nigris, capite longioribus.---*Lepus timidus.* Linn. Syst. Nat. Gmel, i. p. 160.---Fabricius Fauna Groenlandica, p. 25.

Lepus caudâ abbreviatâ, pedibus posticis longitudine corporis dimidii, auriculis apice nigris.---*Lepus timidus.* Erxleben, Syst. regn. animal, gen. 32, sp. 1, p. 325.

Lepus timidus. Common Hare. Turton, i. p. 100.---Kerr, p. 277.

Lepus vulgaris, cinereus. Klein, quad. disp. p. 51.

Lepus. Brisson, regn. animal, p. 138.---Gesner, 165.---Ruysch, i. pa. 1, p. 109.

Lepus. THE HARE. Raii. Syn. quad. p. 204.

Le Lievre. Buff. Sonn. xxiv. p. 194, tab. 9, fig. 1.

Le Lievre commun. Cuv. Tab. Element, p. 131.

Common Hare. Penn. Quad. ii. p. 98.---Shaw's Gen. Zool. ii. p. 197, tab. 162, fig. 2.---Bing. Anim. Biog. 3d edit. i. p. 484.

Hare. Penn. Brit. Zool. i. p. 198.---Smellie's Buffon, iv. p. 137, tab. 58.

34. THE VARYING HARE. Tail short, ears shorter than the head; the whole of the fur white in the winter, except the tips of the ears, which are always black. *Lepus variabilis.* Linn.

The size of the Varying Hare, in Scotland, is considerably less than that of the Common Species; the former weighing only about six pounds and a half, and the latter from eight to twelve pounds. But in Russia and Siberia it greatly exceeds the Common Hare in size. Ears shorter, and legs more slender than those of the latter animal. Fur soft and thick, and extends over the soles of the feet.

Edges and tips of the ears, and the soles of the feet black. In summer the head is of a greyish tawny colour; and the ears and back are tawny, but somewhat mixed with black. The sides become gradually whiter from the back downwards; and the belly is white.

In winter, the fur of every part of the body changes to a snowy whiteness, except the *ears* and *feet*, which still retain their black colour.

Found only in the alpine parts of Scotland.

Lepus caudâ abbreviatâ, excepto auricularum capite brevioribus apice nigro hieme totus albus.---*Lepus variabilis.* Linn. Syst. Nat. Gmel. i. p. 161.

Varietas alpina alba, minor, auriculis brevioribus apice nigris, cruribus gracilioribus.---*Lepus timidus alpinus.* Erxleben, Syst. regn. animal, gen. 32, sp. 1, var. α . p. 328.

Lepus variabilis. Varying Hare. Turton, i. p. 101.---Kerr, p. 278.

Lepus (albus) caudatus plane candidus. Brisson, regn. animal, p.

Lepus albissimus. Klein. quad. disp. p. 51.

Lepus hieme albus. ALPINE HARE. Forster in Phil. Tran. lxii. p. 375.

Varying Hare. Penn. Quad. ii. p. 100.---Shaw's Gen. Zool. ii. p. 201.

Alpine Hare. Penn. Brit. Zool. i. p. 102, tab. 10.

35. THE WILD RABBIT. Tail short, and nearly of the same colour as the body; ears tipped with black; hind legs shorter than the body. *Lepus cuniculus.* Linn.

Size somewhat smaller than that of the Hare; and *ears* and *hind-legs* shorter in proportion. The latter, measured from the uppermost joint to the toe, are only about one third of the length of the back, from the rump to the nose.

Colour dusky brown, paler or whitish on the under parts. Tail black above, whitish beneath. W. B.

Lepus caudâ abbreviatâ, subconcolore, auriculis apice atris, cruribus posticis trunco brevioribus.---*Lepus cuniculus*. Linn. Syst. Nat. Gmel. i. p. 162.

Lepus caudâ abbreviatâ, pedibus posticis corpore dimidio brevioribus.---*Lepus cuniculus*. Erxleben, Syst. regn. animal, gen. 32, sp. 3, p. 381.

Lepus cuniculus. Rabbet. Turton, i. p. 101.---Kerr, p. 281.

Cuniculus nostras. Brisson, regn. animal, p. 140.

Cuniculus. Gesner, p. 362.---Ruysch, i. pa. 1, p. 111.

Cuniculus, A RABBET OR CONEY. Raii. Syn. quadr. p. 205.

Le Lapin. Buff. Sonn. xxiv. p. 225, tab. 9, fig. 2.---Cuv. Tab. Element, p. 131.

Rabbet. Penn. Quadr. i. p. 140.---Penn. Brit. Zool. i. p. 104, tab. 10.---Shaw's Gen. Zool. ii. p. 204, tab. 162, fig. 1.---Bing. Anim. Biog. i. p. 488.

VAR. 1. *The Domestic Rabbet.*

The *head* of this variety is somewhat more elongated than that of the Wild Rabbet, which is short and very round.

Colour various, sometimes black, black and white, silvery grey, or white. White Rabbets have generally red eyes. *Hair under the feet*, lighter yellow in the domestic than the wild Rabbet. W. B.

** *With Hoofs.*

1. No front-teeth in the upper jaw.

ORDER V. PECORA.

No front-teeth in the upper jaw; in the lower jaw six or eight, at a distance from the grinders. Feet hoofed. The females have their teats situated in the groin.

THE DEER TRIBE. Horns solid, covered while young with a hairy skin, naked, branched, and annual: front-teeth in the lower jaw eight: most of the species are destitute of tusks, but in a few there is one tusk on each side of the upper jaw. *CERVUS.* *Linn. Syst. Nat. Gmel. gen.* 29, i. p. 175.

Males only *horned.* *Body* covered with short hair. *Tail* short. W. B.

36. THE RED DEER. Horns with several branches, and rounded through their whole length. *Cervus elaphus.* *Linn.*

Height, at the shoulder, about $3\frac{1}{2}$ feet. The Stag, or male, differs from the male Fallow deer principally, in having its *horns* rounded through their whole length; whilst those of the latter are flat, and, in some parts, of the breadth of more than a hand. The greatest known *weight* of a British Stag, exclusive of the entrails, head, and skin, has been 314lb.

These

These animals vary considerably in *colour*. They are generally of a reddish brown, on their *upper parts*, and white *beneath*. Sometimes dark or blackish brown; sometimes pale or yellow brown; and instances have occurred of Stags being perfectly white. W.B.

Found in the mountainous parts of Scotland, in the Forest of Martindale, Cumberland, the New Forest, Hampshire, in the woods on the river Tamar in Derbyshire, and amongst the mountains of Kerry, in Ireland.

Cervus cornibus ramosis totis teretibus recurvatis.---

Cervus elaphus. Linn. Syst. Nat. Gmel. i. p. 176.---

Erxleben, Syst. regn. animal, gen. 30, sp. 3, p. 301.

Cervus elaphus. Stag. Turton, i. p. 108.---Kerr, p. 298.

Cervus. Brisson, regn. animal, p. 86.---Gesner, p. 326.---Ruysch, i. pa. 1, p. 58.---Raii. Syn. quad. p. 84.

Cervus nobilis, ramis teretibus, omnibus notus. Klein, quad. disp. p. 23.

Le Cerf. Buff. Sonn. xxiv. p. 66, tab. 4.

Le Cerf commun. Cuv. Tab. Element, p. 160.

Stag. Penn. Quadr. i. p. 86.---Penn. Brit. Zool. i. p. 41.---Shaw's Gen. Zool. ii. p. 276, tab. 177.---Bing. Anim. Biog. 3d edit. ii. p. 36.

37. THE FALLOW DEER. Horns branched, recurved, compressed, summits palmate. *Cervus dama*. Linn.

In *size* smaller than the Stag. *Horns* flatted, in some parts, to the breadth of more than a hand, and divided into processes only down their outside. An *antler*, or simple slender process, rises from the base of each horn; and there is a similar one at some distance above the first; both pointing forward. In general form of body, the Fallow and the Red Deer have a great resemblance to each other.

Colour brownish bay, more or less deep on the upper parts; and whitish beneath, on the insides of the limbs, and under the tail, which is generally bounded, on each side, by a descending streak of black.

Sometimes the animals are spotted with white or grey; and sometimes, though very rarely, they are entirely white. W. B.

Not now found in a wild state in any part of Great Britain or Ireland: kept in most noblemen's and gentlemen's parks.

Cervus cornibus ramosis recurvatis compressis: summitate palmata.---*Cervus dama.* Linn. Syst. Nat. Gmel. i. p. 178.---Erxleben, Syst. regn. animal, gen. 29, sp. 5, p. 309.

Cervus dama. *Fallow Deer.* Turton, i. 109.---Kerr, p. 298.

Cervus palmatus, dama cervus. Klein, quadr. disp. p. 25.

Dama vulgaris. Brisson, regn. animal, p. 91.---Gesner, p. 307.---Ruysch, i. pa. 1, p. 52, tab. 31.

Cervus platyceros. Raii. Synn. quadr. p. 85.

Le Daim. Buff. Sonn. xxiv. p. 134, tab. 7.---Cuv. Tab. Element, p. 160.

Fallow Deer. Penn. quadr. i. p. 113.---Penn. Brit. Zool. i. p. 41.---Shaw's Gen. Zool. ii. p. 282, tab. 178.---Smellie's Buffon, iv. p. 113, tab. 54, 55.---Bing. Anim. Biog. 3d edit. ii. p. 43.

38. **THE ROE.** Horns erect, and divided towards their extremity into two or three points, or branches; body of a reddish brown colour. *Cervus capreolus.* Linn.

Height, at the shoulder, not more than $2\frac{1}{2}$ feet; and *weight* not more than from fifty to sixty pounds. *Tail* about an inch long. *Horns* six or eight inches in length, strong, upright, rugged, and divided towards their extremity into three points or branches. *Ears* long. On the outside of each *hind-leg*, below the joint, there is a tuft of long hair.

In summer the hair is short and smooth, and of a bright reddish colour; but in winter it is very long and thick. Each *hair* is cinereous

reous at its lower part; near the end there is a bar of black, and the point is yellow. *Ears* covered with long hair, and pale yellow in the inside. *Hairs* on the *face* black, tipped with ash-colour; and the spaces bordering on the eyes and mouth black. *Chest, belly,* and insides of *thighs* of yellowish white. *Rump* perfectly white.

Found in a wild state in several of the mountainous districts of Scotland.

Cervus cornibus ramosis teretibus erectis: summitate bifida; corpore fusco-rufo.---*Cervus capreolus.* Linn. Syst. Nat. Gmel. i. p. 180.---Erxleben, Syst. regn. animal, gen. 30, sp. 7, p. 313.

Cervus capreolus. Roe. Turton, i. p. 110.---Kerr, p. 302.

Capreolus. Brisson, regn. animal, p. 89.

Cervus minimus, capreolus, cervulus caprea, cornibus brevibus ramosis, annuatim deciduis. Klein, quadr. disp. p. 24.

Capreolus vulgo. Raii. Syn. quadr. p. 89.

Caprea, capreolus, sive dorcas. Gesner, p. 296.

Le Chevreuil. Buff. Sonn. xxiv. p. 156, tab. 8.---Cuv. Tab. Element, p. 160.

Roe. Penn. Quadr. i. p. 120.---Penn. Brit. Zool. i. p. 49, tab. 4.

Common Roe. Shaw's Gen. Zool. ii. p. 291.

Roe Deer. Smellie's Buffon, iv. p. 120, tab. 56, 57.

THE GOAT TRIBE. Horns hollow, turning upwards and backwards, compressed, rough: front-teeth in the lower jaw eight: no tusks: chin bearded. **CAPRA.** Linn. Syst. Nat. Gmel. gen. 30, i. p. 193.

Horns unbranched, transversely wrinkled, permanent, standing almost close at the base. **W. B.**

39. THE COMMON GOAT, Horns arched and carinated.
Capra ægagrus hircus. Linn.

Not known in a wild state in any part of Great Britain or Ireland.

Capra cornibus carinatis arcuatis.---*Capra (ægagrus) hircus.* Linn. Syst. Nat. Gmel. gen. 30, sp. 1, var. β . p. 193.---Erxleben, Syst. regn. animal, gen. 28, sp. 1, var. β . p. 256.

Capra ægagrus, var. 2. *Domestic Goat.* Turton, i. p. 116.

Capra hircus β . *Common Goat.* Kerr, p. 321.

Hircus et capra domestica. Brisson, regn. animal. p. 52.

Tragus domesticus, hircus, capra, caper si castratus. Klein. quadr. disp. p. 15.

Capra domestica. THE GOAT. Raii. Sya. quadr. p. 77.

Capra, hircus, hædus. Gesner, p. 268.

La Chevre. Buff. Sonn. xxiii. p. 91, tab. 4, fig. 1, 2.

Le Bouc, et la Chevre domestique. Cuv. Tab. Element, p. 164.

Common Goat. Shaw's Gen. Zool. ii. p. 369, tab. 199.---Bing. Anim. Biog. 3d edit. ii. p. 58.

Domestic Goat. Penn. Brit. Zool. i. p. 35, tab. 3.

Goat. Smellie's Buffon, iii. p. 486, tab. 16, 17.

THE SHEEP TRIBE. Horns hollow, transversely wrinkled, turning backwards, and spirally intorted: front-teeth in the lower jaw eight: no tusks. *Ovis.* Linn. Syst. Nat. Gmel. gen. 31, i. p. 197.

Horns unbranched, permanent. W. B.

40. THE COMMON SHEEP. Horns compressed, and lunated. *Ovis aries*. Linn.

Not known in a wild state in any part of Great Britain or Ireland.

Ovis cornibus compressis, lunatis.---*Ovis aries*. Linn. Syst. Nat. Gmel. i. p. 197.---Erxleben, Syst. regn. animal, gen. 27, sp. 1, p. 242.

Ovis aries. Common Sheep. Turton, i. p. 117.---Kerr, p. 325.

Ovis domestica. Brisson, regn. animal, p. 74.---Raii. Syn. quadr. p. 73.

Aries, &c. Klein, quad. disp. p. 13.

Ovis. Gesner, p. 872, &c.---Ruysch, i. pa. 1, p. 38.

La Brebis. Buff. Sonn. xxiii. p. 69, tab. 3, fig. 1, 2.

La Brebis ordinaire, le Belier et le Mouton. Cuv. Tab. Element, p. 165.

Common Sheep. Penn. Quadr. i. p. 74.---Shaw's Gen. Zool. ii. p. 385.---Bing. Anim. Biog. 3d edit. ii. p. 65.

Fleecy Sheep. Penn. Brit. Zool. i. p. 27.

Sheep. Smellie's Buffon, iii. p. 462, tab. 14, 15.

* *Hornless*.

VAR. 1. *New Leicester or Dishley Sheep*.

Face and legs white. Wool long and fine. Head long and narrow; ears soft and thin, standing backward. Back flat, and body round and barrel-like. Pelt thin, and wool close set; the staple about six inches long. Bones slender.

VAR.

VAR. 2. *Lincolnshire Sheep.*

Face and legs white. Wool long and heavy. Carcase long, thin, and weak. Pelt thick. Staple from ten to eighteen inches long. Legs rough, clumsy, and large boned.

VAR. 3. *Tees-Water Sheep.*

Face and legs white. Wool long and somewhat coarse. Legs longer and finer boned; and carcasses heavier, more firm, and much wider on the back and sides, than in the preceding variety. Wool also shorter, and not so heavy.

VAR. 4. *South Down Sheep.*

Face and legs grey or speckled. Wool peculiarly fine, close, and short. Bones small.

VAR. 5. *Ryeland or Herefordshire Sheep.*

Face and legs white. Wool very fine and short. Animal of small size.

VAR. 6. *Herdwick Sheep.*

Face and legs speckled. Wool short, thick, and matted; but coarser than any of the other short-woolled breeds. Bones small. Animal of small size.

VAR. 7. *Cheviot Sheep.*

Face and legs white. Wool short and fine. Eyes prominent; and countenance open. Body long. Legs fine, clean, and small boned.

VAR.

VAR. 8. *Shetland Sheep.*

Colour various. Wool peculiarly fine, soft, and cottony. Tail remarkably short and small. The animals are so small, that, when full grown, they do not exceed the weight of thirty or forty pounds.

**** *Horned.***

VAR. 9. *Dorsetshire Sheep.*

Horns round and small. Face and legs white. Wool short and fine. Animals tall and light in the body. Head somewhat long. Shoulders broad at the top, and lower than the hind quarters. Loins broad. Back tolerably straight; and carcase deep. Staple about two inches long.

VAR. 10. *Wiltshire Sheep.*

Horns lying backward, almost close to the neck, and encircling the ears. Face and legs white. Wool short and close, but not fine: very little wool under the belly. Face long. Legs long, and large boned.

VAR. 11. *Exmoor Sheep.*

Face and legs white. Wool long. Head, neck, and bones peculiarly soft and delicate. Carcase narrow and flat sided.

VAR.

VAR. 12. *Norfolk Sheep.*

Horns sometimes enormously large. Face and legs black, or dark grey. Wool short and fine.

VAR. 13. *Heath Sheep.*

Horns large and spiral. Face and legs black. Wool long, open, coarse, and shagged.

VAR. 14. *Irish Sheep.*

Face and legs grey. Head long, with large flagging ears, and sunk eyes. Legs long, thick, and crooked. Neck long, and set on below the shoulders. Breast narrow, short, and hollow before and behind the shoulder. The animals are of great size, flat-sided, with narrow herring-backs; their hind quarters droop, and the tail is set low.

THE OX TRIBE. Horns hollow, smooth, bent outwards and forwards, so as generally to form the segment of a circle: front-teeth in the lower jaw eight: no tusks. *Bos.* *Linn. Syst. Nat. Gmel. gen. 32, i. p. 202.*

Horns unbranched, permanent. *W. B.*

41. THE COMMON OX. Horns round, and curving outwards, loose dew-lap. *Bos taurus domesticus.* *Linn.*

Not known in a perfectly wild state in any part of Great-Britain or Ireland.

Bos cornibus teretibus extorsum curvatis, palearibus laxis.---*Bos (taurus) domesticus.* Linn. Syst. Nat. Gmel. gen. 32, sp. 1, var. β . i. p. 202, 203.---Erxleben, Syst. regn. animal, gen. 26, sp. 1, var. β . p. 228.

Bos taurus, var. 2. European Ox. Turton, i. p. 119.---Kerr, p. 334.

Bos domesticus. Brisson, regn. animal, p. 78.---Gesner, p. 25, &c.---Ruysch, i. pa. 1, p. 26.---Raii. Syn. quad. p. 70.

Taurus domesticus, cum vacca. Klein. quad. disp. p. 10.

Le Bœuf. Buff. Sonn. xxiii. p. 1, tab. 1.

Le Bœuf ordinaire, le Taureau, la Vache, le Veau, le Génisse. Cuv. Tab. Element, p. 166.

Common Ox. Shaw's Gen. Zool. ii. p. 397, tab. 206.---Bing. Anim. Biog. 3d edit. ii. p. 76.

Domestic Ox. Penn. Brit. Zool. i. p. 18, tab. 2.

Ox. Smellie's Buffon, iii. p. 423, tab. 13.

* *Horned.*

VAR. 1. *Wild Cattle.*

Size small. Colour entirely white. Horns white, with black tips, and very fine. Whole inside of ear, and about $\frac{1}{3}$ of outside, from tip downward, red. Head small. Muzzle black.

VAR. 2. *Devonshire Cattle.*

Size large. Colour red or mahogany. Horns light yellow, and tapering to a point. Head small. Muzzle of a clear yellow like horn. Round each eye a light ring. Bones fine. Skin thin.

VAR. 3. *Herefordshire Cattle.*

Size large. Colour dark red or brown, with a streak of white along the top of the neck to the shoulder. Belly and under part of the throat white. Face bald or spotted. Horns bright and spreading, but not long. Head small.

VAR. 4. *Sussex Cattle.*

Colour generally red or brown, but sometimes black, black and white, or red and white. Horns of middle length, usually white, and somewhat pointing upward. Hair fine. Skin thin. Neck and head clean. Thighs thin. Bones proportionably larger than in either of the preceding varieties.

VAR. 5. *Northern short-horned, Dutch, or Holderness Cattle.*

Size large. Colour various. Horns short. Body wide or thick. Hair short, smooth, and thinly set. Hide remarkably thin.

VAR. 6. *Lancashire or long-horned Cattle.*

Colour various, but invariably a white list or stripe along the back. Horns long, and either regularly and horizontally extended to the points, or falling down the cheeks, till the points almost meet beneath. Hide thick and firm. Hair long, close, and softer than in most other British cattle.

VAR. 7. *Alderney Cattle.*

Size small. Ground colour red or yellowish, spotted with white. Horns short, and head small. Bones very fine.

VAR. 8. *Highland Stots, or Kiloe Cattle.*

Size small. Colour generally black, or deep brown, though sometimes brindled. Horns black at the tip, and very sharp. Hair thick and furry.

VAR. 9. *Welsh Cattle.*

Size small. Colour various. Horns large and white. Hide thick; and bones large.

VAR. 10. *Irish Cattle.*

Size small. Colour various. Horns long. Shape in general very bad.

** *Hornless or polled.*

VAR. 11. *Suffolk Duns.*

Size small. Colour generally dun or pale yellow; but many of the animals are red, or red and white. Head and ears rough. Bones, in general, fine. Hide thin. Body long; and legs somewhat short. Belly big; and hip bones high and ill covered.

Mane short, ears long and slouching.

The Ass, in Great Britain and Ireland, is known only as a domestic animal.

Equus pedibus solidungulis, caudâ extremitate setosâ, cruce nigrâ (mari) suprâ humeros.---*Equus (asinus) domesticus.* Linn. Syst. Nat. Gmel, gen. 33, sp. 2, var. β . i. p. 211.---Erxleben, Syst. regn. animal, gen. 24, sp. 2, var. β . p. 213.

Equus asinus, var. 2. Domestic Ass. Turton, i. p. 123.---Kerr, p. 344.

Asinus. Brisson, regn. animal, p. 102.---Gesner, p. 5.---Ruysch, i. pa. 1, p. 12.---Raii. Syn. Quad. p. 63.

L' Ane. Buff. Sonn. xxiii. p. 277, tab. 3.---Cuv. Tab. Element, p. 169.

Ass. Penn. Quadr. i. p. 102.---Penn. Brit. Zool. i. p. 13.---Shaw's Gen. Zool. ii. p. 429, tab. 216.---Smellie's Buffon, iii. p. 398, tab. 12.---Bing. Anim. Biog. 3d. edit. ii. p. 109.

1. *The Mule.* The hybrid produce of a male Ass and a Mare: barren. *Equus asinus mulus.* Linn.

Head large and clumsy, ears long and erect, mane short, tail thin.

Equus hybridus ex asino et equa, sterilis.---*Equus (asinus) mulus.* Linn. Syst. Nat. Gmel. gen. 33, sp. 2, var. γ . i. p. 212.---Erxleben, Syst. regn. animal, gen. 24, sp. 2, var. γ . p. 215.

Equus asinus, var. 3. Mule. Turton, i. p. 123.---Kerr, p. 345.

Mulus. Brisson, regn. animal, p. 103.---Klein, quad. disp. p. 6.---Gesner, p. 702.---Ruysch, i. pa. 1, p. 15.

Mulus

Mulus. A MULE. Raii. Syn. quadr. p. 64.

Le Mulet. Buff. Sonn. xxiii. p. 397, tab. 4, fig. 1.---
Cuv. Tab. Element, 16.

Mule. Penn. Brit. Zool. i. p. 16.---Smellie's Buffon,
viii. p. 1.

2. *The Hinny*. The hybrid produce of a Stallion and a female Ass: barren. *Equus asinus hinnus*. Linn.

Head long and slender, ears like those of a horse, mane short, tail well filled with hair.

Equus hybridus ex equo et asina, sterilis.---*Equus* (*asinus*) *hinnus*. Linn. Syst. Nat. Gmel. gen. 33, sp. 2, var. δ . i. p. 212.---Erxleben, Syst. regn. animal, gen. 24, sp. 2, var. δ . p. 216.

Equus asinus, var. 4. *Hinny*. Turton, i. p. 123.

Hinnus seu hinnulus. Gesner, p. 18.---Raii. Syn. quadr. p. 64.

Le Bardeau. Buff. Sonn. xxii. p. 398, note. tab. 4, fig. 2.---Cuv. Tab. Element, p. 169.

Bardeau. Kerr, p. 345.

THE HOG TRIBE. Upper front-teeth four, converging at the points: lower front-teeth (in most species) six, projecting forwards: two tusks in each jaw, the upper ones shorter, and the lower ones standing out of the mouth: muzzle terminating in a truncated, movable, and prominent snout: feet double hoofed. *Sus*. Linn. Syst. Nat. Gmel. gen. 35, i. p. 217.

44. THE COMMON HOG. Fore part of the back set with strong bristles, tail hairy. Ears long, pointed, and slouching. *Sus scrofa domesticus*. Linn.

The Hog, in Great Britain and Ireland, is known only as a domestic animal.

Sus dorso antice setoso caudâ pilosâ.---*Sus (scrofa) domesticus*. Linn. Syst. Nat. Gmel. gen. 35, sp. 1, var. β . i. p. 217.---Erxleben, Syst. regn. animal, gen. 19, sp. 1, var. β . p. 179.

Sus scrofa, var. 2. *Common Hog*. Turton, i. p. 125.---Kerr, p. 350.

Sus domesticus. Brisson, regn. animal, p. 106.

Porcus, sus, scrofa, verres. Klein. Quad. disp. p. 25.

Sus, seu porcus domesticus. Raii. Syn. Quadr. p. 92.

Sus, verres, scrofa. Gesner, p. 872.---Ruysch, i. pa. 1. p. 70.

Le Cochon. Buff. Sonn. xxv. p. 113, tab. 5, fig. 1, tab. 6, fig. 2.

Le Cochon domestique. Cuv. Tab. Element, p. 151.

Common Hog. Penn. Quadr. i. p. 140.---Penn. Brit. Zool. i. p. 54.---Shaw's Gen. Zool. ii. p. 459, tab. 221, 222.---Smellie's Buffon, iii. p. 500, tab. 22, 23.---Bing. Anim. Biog. 3d edit. ii. p. 126.

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